CONDORITO 400

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Operator's manual

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JACTO has an ongoing concern for the safe and effective use of chemicals.

This concern is indispensable, for the use of chemicals has become a necessary practice for obtaining a more productive and more economical harvest.

However, the improper application of chemicals is harmful to the human being, the environment and the cultivations themselves.

JACTO's aim is to prepare and guide the farmer on the proper use of the farm equipment manufactured by JACTO.

Therefore, read carefully and understand thor-oughly this manual before operating this sprayer and keep it always at hand when handling this sprayer for quick consultation in case you are not quite sure of some operation or adjustment. If you still have questions, contact your JACTO dealer.

ATTENTION!

The Jacto CONDORITO 400 equipment has been developed for the exclusive use of spraying chemicals.
The Jacto CONDORITO 400 sprayer manual refers only to instructions for use and maintenance of parts and components made by Jacto.
Read it carefully and follow the recommendations contained herein. In case of doubt, please contact JACTO.

Identification Plate

The machine model, serial number and lot (manufacturing month and year) are printed on the machine identification plate.

This information is important to enable us to keep records on modifications, if any, made to the material employed and construction characteristics of the machine.

When ordering replacement parts and maintenance services, it is essential to inform the machine model, number and lot in order to get an expeditious and efficient response.

JACTO is the registered trademark of MÁQUINAS AGRÍCOLAS JACTO S.A.
MÁQUINAS AGRÍCOLAS JACTO S.A. implements a policy towards the ongoing enhancement of its products. Therefore, it reserves the right to change its products without prior notice and without incurring in any obligation whatsoever in connection with such changes.

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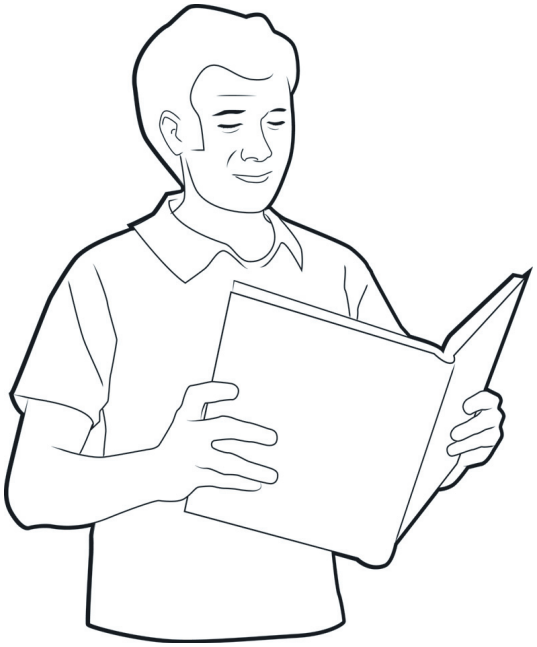
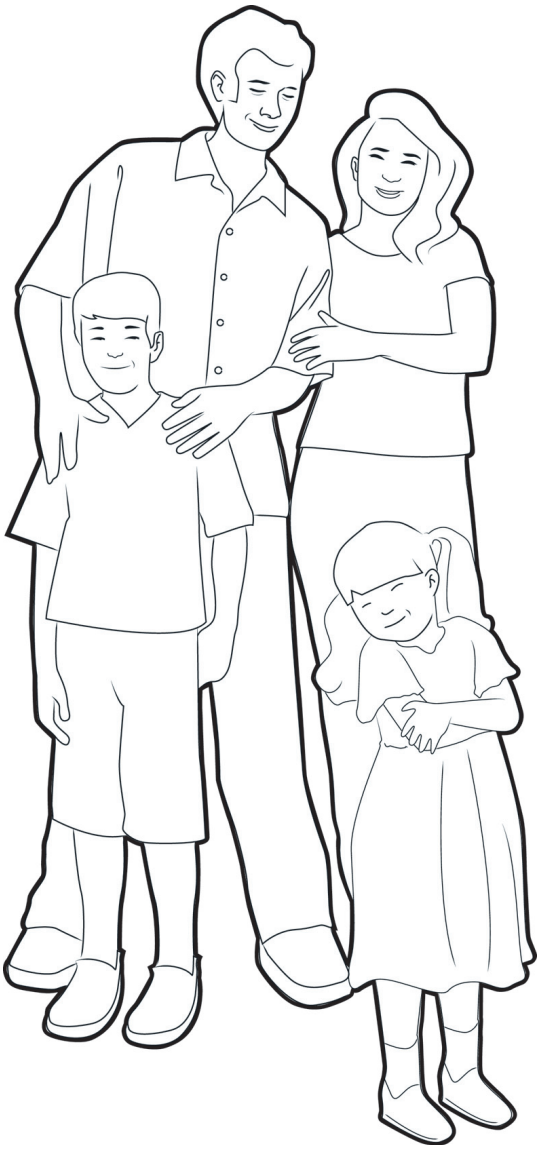




Chapter 'Precautions" is intended to guide the operator on the cautions to be taken during the operation, maintenance and storage of this equipment.

It is important to remind that this equipment has been carefully developed to provide optimum performance with cost savings, and ease of operation and safety.

For that purpose, be always mindful of the information contained in the instructions manual. If doubts arise at any time, please contact us.

The instructions in this manual may be accompanied by symbols having the following meanings:

ATTENTION: advises of potential accident hazard situations that require permanent operator's attention.

NOTE: reminders or warnings.

OBSERVATION: advises of or explains certain instructions/situations.

ATTENTION!

By disregarding the safety practices you are risking your life and the life of all people around you. This manual contains important safety warnings. Read it carefully and be alert to any possibility of personal accident.

Operator's and owner's responsibilities

According to the provisions in Directive NR31 – Directive on Safety and Health in Farming Labor, the farm equipment owner and operator shall contribute to the safe application of chemicals and other agro-chemicals, by observing the legal determinations outlined below.

Operator´s responsibilities:

- Comply with the determination regarding safe manners for performing his/her activities;
- Operate the equipment within the operating limits and restrictions specified in this manual;
- Read this manual and make sure that all information and recommendations have been understood before putting this equipment in operation.

Owner responsibilities:

- The equipment owner shall keep the instructions manual at a place where the operator can have free access to it whenever necessary.
- Whenever dictated by the kind of defensive to be sprayed, the employer has the obligation of providing the operator with the appropriate PPE - Personal Protection Equipment, see that the PPE is properly hygienized, train the employee and enforce and inspect the use of the PPE.
- The owner shall replace or repair components of the equipment whenever such components exhibit defects hindering the safe operation of the same.
- The owner or whoever in charge shall take responsibility for qualification of the equipment operators in order to guarantee the safe operation thereof.

Environmental responsibilities

ATTENTION!

It is responsibility of the sprayer owner and sprayer user/operator to comply with the laws and regulations in effect. The sprayer owner or the person responsible shall provide information to operators on environmental risks and how to care for the environment. Jacto recommends wearing approved and proper PPEs whenever operating the sprayer.

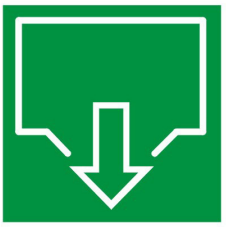
- It is responsibility of the sprayer owner to comply with the laws and regulations in effect.
- Waste such as contaminated parts, electrical and electronic components, and others when equipment (sprayer) is dismantled after rendering services, being serviced or a the end of their useful lives must be disposed of in a way that respects the environment, avoids air, water and soil pollution.
- If necessary, residues must be stored in proper places and later collected by trained and authorized employees or companies.
- Principles for environmental protection, recycling and proper disposal of equipment, its parts and components must be respected taking into consideration the legislation in effect (municipal, state and federal) as well as guidelines to dispose of parts, components or any other item of the equipment.
- Batteries must be properly disposed of in places which have been approved to collect such material. Legally speaking, places that sell new batteries can collect used ones and take them to recycling centers or to their manufacturers. If you are not sure how to dispose of batteries in an environmentally sound manner, JACTO suggest contacting their manufacturer for further information.
- JACTO recommends wearing proper and approved PPEs at all times when handling the equipment.

Safety and maintenance related decals have been affixed all over the equipment indicating any hazardous conditions that could cause damages or accidents affecting the operator or the equipment during operation.

Before operating your equipment, identify all decals and by reading these pages make sure that you have understood and are aware of the meaning of each such symbol.

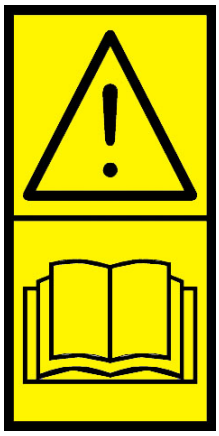
Keep them in good repair, clean and legible. Replade them immediately in case of damage by ordering them through the part numbers specified below.

P/N: 276220
ATTENTION: Lubrication point



P/N: 389387
ATTENTION: Drain point.

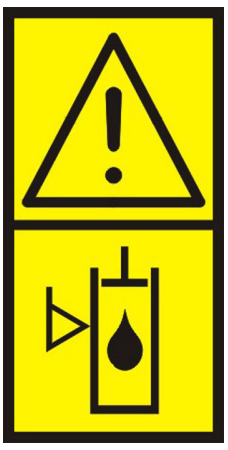
P/N: 395061
ATTENTION: Lubrication *point with oil.*



P/N: 379248
ATTENTION: Read the operator's manual before operating the sprayer.

P/N: 379073
ATTENTION: Clean water tank to wash the hands.

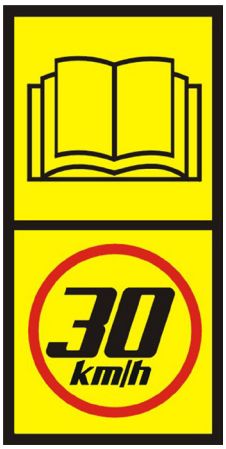
P/N: 379131
ATTENTION: Obligatory use of protective clothing.



P/N: 379107
ATTENTION: Hydraulic oil level indicator.

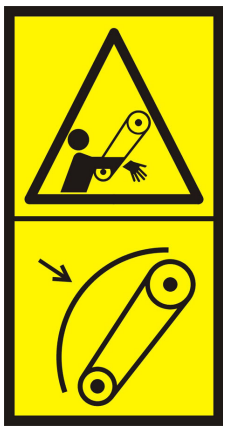
P/N: 379123

ATTENTION: Obligatory use of hearing protector.



P/N: 379214

ATTENTION: Maximum speed allowed for the machine is 30 km/h.



P/N: 379065

ATTENTION: Risk of serious injuries. Keep all protection devices in its places.

P/N: 380014

ATTENTION: Do not get into the main tank of the sprayer.

P/N: 379008

ATTENTION: Risk of serious injuries. Do not make any operation on the PTO shaft if the PTO is engaged.

P/N: 378992

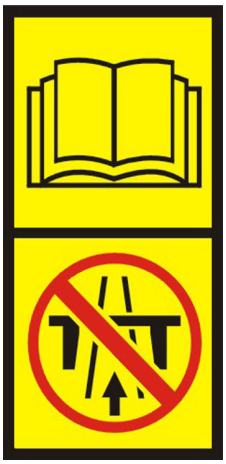
ATTENTION: Risk of serious injuries. Do not maneuver the sprayer close to electricity supply cables.

P/N: 379115

ATTENTION: Obligatory use of protective mask.

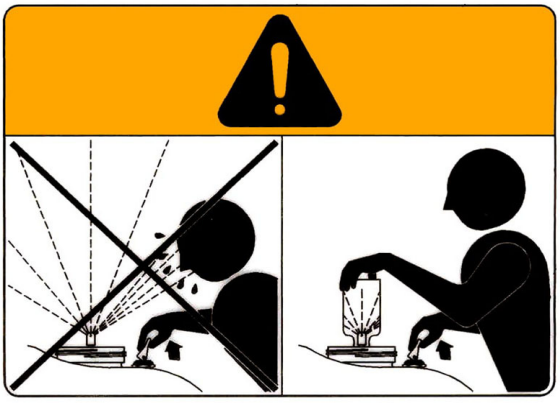
P/N: 379172

ATTENTION: Be careful when opening the lid of the main tank.



P/N: 379222

ATTENTION: Prohibited trafficof this machine on the high way.



P/N: 169128

ATTENTION: Never pull the lever without the chemical container over the container rinse nozzle.

RG: 1163706

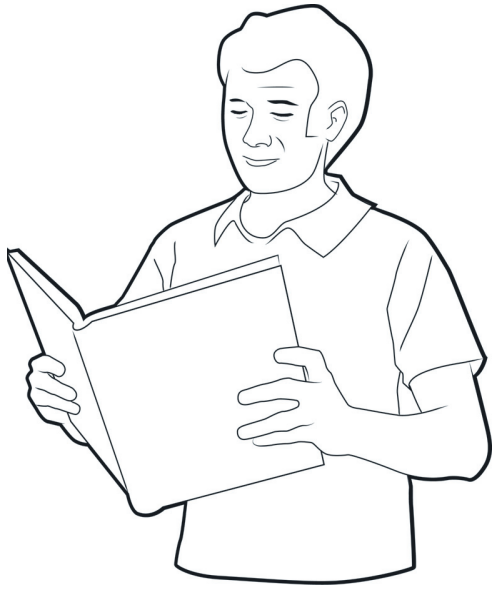
ATTENTION: Hazardous substances.

P/N: 983932

Identification plate

P/N: 379230

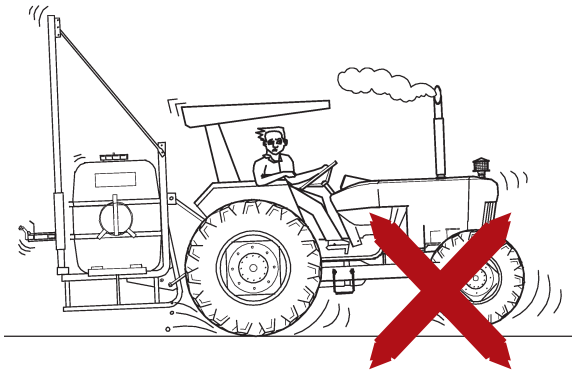
ATTENTION: Read the operator's manual before operating the sprayer.



- Only skilled and qualified operator and knowledgeable of the information contained in the manuals accompanying the product should operate the CONDORITO 400 sprayer;
- Before starting any operation, it is very important to learn about all information contain in this manual. In case of doubt, refer to Jacto's technical assistance.
- Do not ingest alcoholic beverages, tranquilizers or stimulating substances both before and during work.
- During manipulation of the setup, always use approved, recommended and appropriate PPEs such as: long-sleeve overalls, waterproof coat or apron, waterproof gloves, waterproof broad brim hat, boots and special protection masks provided with filters suitable for each kind of product. In case of doubts, read the chemical label or contact the manufacturer of the same.
- When checking the machine components that are in direct contact with the farm chemicals, use approved PPEs and according to the recommendation stated on the product label.
- If the tractor is of the cab type and provided with air cleaning system, clean your footwear and remove contaminated clothing. Keep the same outside the cab within a properly sealed container.
- If recommended by the tractor manufacturer, use ear protector.
- Use approved, recommended and suitable breathing mask if the label on the chemical requires such personal protection equipment.
- Redouble the precautions. Keep away from places where obstacles exist such as trees, stones, holes, erosion ditches, electric network, etc.

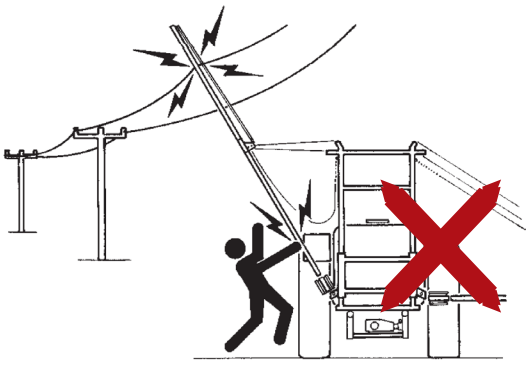
General safety recommendations

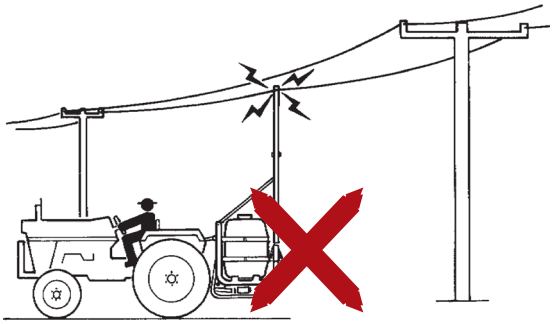
- Use under adverse and not recommended conditions can compromise the integrity of the equipment and components, entailing loss of warranty and disclaimer by the manufacturer for any accident and the resulting consequences.
- Avoid parking the equipment on slopes. If necessary, place chocks under the wheels when parking the equipment on upward or downward slopes.
- Keep the ladder, platform and handrail always clean; oils and greases can cause accidents.
- Do not use the equipment if some critical component needs to be repaired. Provide for the repair before.
- This equipment can cause accidents if used improperly or irresponsibly.
- Do not step on the machine while it is moving.



Electricity supply cables

- Attention when passing next or under an electricity supply cables. In case of doubt, change the course.
- Never fold and unfold the booms close to the electricity supply cables.
- The sprayer must be trailed by the tractor in the farm with the spray booms folded and locked. Always place the sliding frame at the lowest position (rest position of the fixed frame).
- Remove the booms of the sprayer before transporting it by wagons or trucks.





- Unloading shall take place at spots specifically created for unloading such type of equipment. Do not improvise for unloading the equipment.

- Wear the PPEs during removal of the ropes fastening the equipment to the cart. If the equipment is not new, make use of a combination of the mandatory PPEs for unloading the equipment (e.g., safety boots, gloves, hardhats, etc.) and mandatory PPEs for chemical spraying (e.g., masks, gloves, etc.) in order to reduce the risk of contamination and accidents.

- For unloading the equipment, use a tractor having the capability to carry out such task. Selection of the tractor shall take into account its drag capacity and spraying mechanism weight.

- Do not untie the mobile parts of the equipment, for instance: PTO shaft, before unloading the equipment down from the truck or cart and position it on a safe place.

- After placing the equipment on a safe place and far away from electric mainlines, reset the jack to its rest position and uncouple the equipment from the tractor.

Precautions when coupling the equipment on the tractor

- Refer to the tractor instructions manual before carrying out this operation. The precautions listed below apply only for coupling the Condorito 400 to the tractor. Precautions related to the use and adjustments to tractor components are the responsibility of the tractor manufacturer and user.

- Information related to the proper adjustment of the three points and procedures for properly coupling the equipment will be outlined in chapter 2 “ASSEMBLY” of this manual.

- The operation for coupling the equipment to the three points may be performed by more than one individual. In such case, the people engaging in the operation shall be aware of the risks, be trained, qualified and skilled and possess the necessary experience in this kind of work.

- Avoid staying in the way of the tractor tires. If possible, carry out the coupling of the equipment by yourself.

- Before stepping down of the tractor for coupling the equipment, apply the parking brake. Shut down the diesel engine and remove the starting key from the contact keyhole.

- After the coupling, carry the equipment to the place where the components will be assembled thereon.

ATTENTION!

By disregarding the safety practices you are risking your own life and the life of all people around you.
This manual contains important safety warnings. Read it carefully and be on the alert to any possibility of personal accident. Keep all decals affixed to the machine and replace the same if necessary.

- The improper handling by untrained people can give rise to serious or fatal accidents.
- Do not perform adaptations or improvisations; they compromise your equipment and put your safety at risk.
- Do not allow children, aged people or animals to stand close to the equipment during use, maintenance or even with the equipment stored.
- Keep hands, feet, loose clothing and long hair away from moving parts.
- Before performing any kind of service, adjustment or maintenance to your equipment, switch off the power take-off and the tractor engine.
- If the equipment was used, even if it has been washed and looks quite clean, wear all PPEs recommended for handling the chemical.
- Do not touch PTO shafts, belts, fans or any other moving parts of the equipment with the PTO coupled of the tractor diesel engine running.
- Use of PTO shafts not provided with protection covering is strictly forbidden.
- When uncoupling the machine, hold it on firm and level ground; if the equipment is provided with parking brake, actuate the same!
- Do not operate the pump without liquid.
- Do not allow the power take-off to operate in excess of 540 rpm.
- Keep the machine in perfect upkeep at all times.
- Safety-related decals were applied across the equipment to orient on the risk of damage or accident that may occur to the operator or equipment.
- Request a JACTO representative during the technical delivery of the equipment for a proper assembly instructions, maintenance, warranty instructions to be carefuly explained.

Warning for adjusting and connecting PTO shaft to the tractor

- Refer to the tractor user manual before performing this operation.
- Turn off the tractor diesel engine, apply the parking brake and remove the starting key from the contact keyhole before coupling the PTO shaft to the tractor PTO.
- Try to couple the PTO shaft to the tractor PTO. If necessary to adjust the PTO shaft length, use the PPEs specific to this operation such as: goggles, gloves, boots, etc.
- When coupling the PTO shaft to the tractor, make sure that the safety pin is securely locked.
- Directions on how to properly adjust the PTO shaft length will be described in chapter 2 “ASSEMBLY” of this manual.
- After length adjustment, clean and lubricate the PTO shaft components. Wear safety gloves for this operation too.
- Never use a PTO shaft not fitted with shroud.
- The PTO shaft will be adjusted to its specific use on the Jacto BC 610 PEC equipment. Use of the PTO shaft on any other equipment is not recommended.
- Do not perform adaptations for reutilization of the PTO shaft.
- Fasten the PTO shaft covering safety chain to the tractor; that chain will prevent the PTO shaft covering from turning together with the PTO shaft.
- Before actuating the tractor PTO, fill the main reservoir.

Fresh water tank for hand wash

- The fresh water tank on this sprayer is for washing hands only. Only use clean water when filling this tank. The use of soap or solutions are prohibited.
- Do not in any circumstances use the water for drinking.
- It's extremely important to keep this tank always full.

600-liter reservoir

There are two methods for supplying the 600-liter water reservoir. The instructions for this operation are described in chapter 4 "OPERATIONS AND ADJUSTMENTS" of this manual. Following are the precautions to be taken when supplying this reservoir:

- During the 600-liter reservoir supply operation, it is extremely important that all those engaged in the operation be using the specified PPEs. It is very important to read the label of the chemical being used in the application. You will find on that label several information on the product and precautions to be adopted, etc.
- Before beginning to supply the 600-liter reservoir, make sure that the reservoir drain valve is shut.
- The setup residue remaining inside the supply hose shall be collected with a bucket and returned to the reservoir which the mixture was prepared in. Do not let this residue to drop on the ground.
- Do not contaminate water springs. Supply of the sprayer shall be carried out at places designed for that purpose.
- Avoid capturing water from sources such as rivers, lakes, dams, creeks, etc.
- By following these recommendations, you will be preserving the environment.

- READ the sprayer instructions manual. For an efficient spraying operation, it is necessary to know the sprayer employed in detail. Only thus will we prevent wasting chemical or improper use of the equipment, and the desired result will be achieved.

- Proper SETTING of the sprayer is a simple operation. Only with the sprayer properly set will the best results be achieved.

- USE approved, recommended and suitable protection equipment (PPEs). During handling, setup of the mixture or spraying, use all protection equipment recommended by the chemical manufacturer.

- After the spraying operation, take a shower and change clothing. The used clothing shall be immediately washed and segregated from the regular use clothing to eliminate the chemical residue. In case of contact with chemicals, wash the affected part with running water for at least 15 minutes. Remember: most contamination cases occur at the time of setup of the mixture, where the chemical is still concentrated, and gets in contact with the hands.

- Do not enter with or keep inside the tractor cab the personal protection equipment (PPEs) used during handling or setup of the mixture in order not to contaminate the place. When inside the tractor cab during operation of the machine and/or spraying operation, use only an ear protector. If noticing that contamination has occurred (if feeling chemical smell) caused by carelessness in working with the door open or letting contaminated materials coming in (e.g.: PPEs), use immediately an approved and suitable breathing mask and contact Jacto's Technical Assistance;

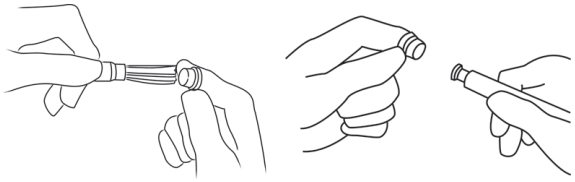
Safety when applying chemicals

- If the manufacturer of the product to be used recommends using a breather mask during application, use it!

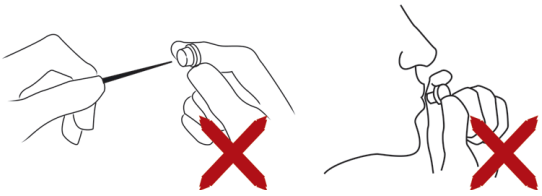
- KEEP the sprayer in perfect condition: Make sure that no leaks exist. If detected, eliminate the same! Leaks not only represent chemical waste but also uneven application and contamination of the environment.

- USE the appropriate nozzle: There is an appropriate nozzle for each chemical to be applied. Climate conditions will also influence nozzle selection. The mixture volume varies from one chemical to another one. The chemical manufacturer should be consulted for the optimum nozzle option.

- DO NOT clear nozzles, vales or tubing with your mouth: Use protection gloves for this operation. Any spraying equipment contains chemical residue.

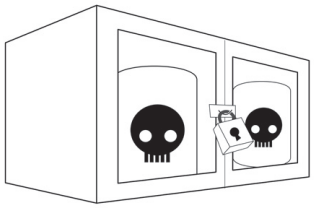


- Never let sprayer parts contact your mouth; this is the fastest means of contamination. If need arises to clear the nozzles, one may also employ a nylon bristle brush (toothbrush).



- DO NOT contaminate water sources: The spraying mechanism refill shall be performed at places designed for that purpose or by means of appropriate refilling vehicles (trucks, carts, etc.). Avoid capturing water from sources such as rivers, lakes, dams, creeks, etc. with the aid of the sprayer return system. PRESERVE THE ENVIRONMENT!

- DO NOT eat, drink or smoke: when handling the mixture or during application of the chemical, keep foodstuff far away from the treated areas.



- KEEP children away from the sprayed areas. Remove children, domestic animals and unprotected people from the treated areas. Do not allow children or other persons not necessary for the services to remain in the chemical handling and application areas.

- APPLY the recommended dosages: The dosages recommended by the manufacturers shall be followed. Any change to the dosage or calculation error may bring about serious consequences to the cultivation or the environment. Do not use chemicals in cultivations which the same have not been recommended for.

- DO NOT spray with strong winds blowing over the area: Excess wind can cause many problems. It will prevent the chemical from reaching its target, causing a poor distribution of chemical over the cultivation; it can also carry the sprayed mixture to water springs, wild animals and the entire environment. Do not spray if the wind velocity is higher than 10 km/h. Do not spray in the absence of winds. Such a situation can cause a thermal reversal. A good application can be obtained with winds blowing at 3 to 7 km/h velocity, temperature from between 7 and 30°C and relative air humidity over 55%. Do not spray against the direction of the wind or during the day warmest hours.

- WASH the packaging before disposing the same. When preparing the mixture, wash the used packaging for about 30 seconds.

- TO NOT reuse empty packaging; Even after several washing operations, chemical packaging still retain residue. Do not burn empty packaging material. After washing, render the same unusable (pierce the packaging bottom) and store it at a safe place until the same are picked up ad recycled.

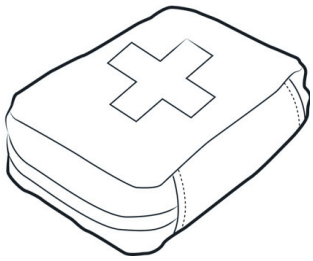
- NEVER fill the sprayer to the top. By doing so, you will prevent the mixture from overflowing and possible contamination of the operator and the environment. When supplying the reservoir, do it up to the maximum limit indicated in its graduated scale.

- When CARRYING chemicals: Never carry them close to foodstuff or animal feed. Never buy packaging exhibiting leaks. Never buy or use chemicals past their shelf life. Never carry chemicals inside the cab. If an accident occurs causing chemical spill, take steps towards preventing the chemical from running into lakes or rivers. Notify the authorities and the chemical manufacturer.

- STORING THE CHEMICAL: Build a brickwork storehouse for chemicals. Line the floor with waterproof material. Do not rest the product piles on the floor or against walls. Use a footboard. Keep at the place a drum with sand to absorb leaks, if any. Install faucet and shower outside the storehouse for the chemical appliers.

- SYMPTOMS of intoxication: unconsciousness, anxiety, convulsions, weakness, headache, indisposition, dizziness, blurred vision, qualms of nausea, vomits, belly ache, diarrhea, urine with different color and consistency; eye, nose and throat irritation, cough and tears.

- FIRST aid: if the victim vomits, let him/her stay sitting. Never serve any alcoholic beverage or milk to intoxicated (poisoned) persons. Keep the victim calm and in a comfortable position. Find the chemical label. Call a doctor.



- Awareness of and compliance with the recommendations contained in this manual will reduce the maintenance costs and extend the service life of the equipment.

- The maintenance services shall be carried out by qualified and skilled professionals. Even if the equipment has been washed, it will be necessary to wear the following PPEs: long-sleeve overalls, waterproof coat or apron, waterproof gloves, goggles and boots and special protection masks provided with appropriate filters.

- Use original parts, for they warrant a perfect operation of the equipment.

- Maintenance services shall be performed with the equipment coupled to the tractor, with the tractor wheels chocked and the diesel engine and tractor PTO shut down.

- Do not make improvisations nor use inappropriate tools during maintenance to the equipment.

- Lubricating oil filters and oils shall be checked from time to time and changed whenever necessary or recommended.

- Every maintenance service on hydraulic tubing or hoses shall be performed after depressurization of the circuit. Redouble your warning during this kind of maintenance.

- The identification of spots exhibiting possible leaks shall be made with paper, never with the hands.

- With the equipment coupled to the tractor and the PTO, be careful and keep away from the moving parts of the equipment; these must be provided with their respective protections. In case of doubt, call the authorized technical assistance.

- In case that no possibility exists of providing maintenance service to the equipment with the diesel engine shut down and outside sheds, keep the shed doors and windows wide open to allow continuous circulation of air. Internal combustion engines running within closed environments cause toxic gases and can asphyxiate the operator within a few minutes.

- Performance of cleaning, lubrication and maintenance services with the machine running is forbidden, unless such running condition is indispensable for the performance of such operations, in which case special protection and signaling steps shall be taken against occupational accidents.

- Welding services on bars, chassis or other metal parts of the equipment may only be performed after removal of the tractor battery cables and after draining and washing of the chemical reservoir.

- Keep the machine decals in perfect repair at all times. They contain important notices and recommendations.

- The removable protectors shall only be removed for cleaning, lubrication and repair or adjustment operations. Once the service is completed, they shall be put back.

- The component lubrication work shall be carried by a skilled, qualified and authorized individual. Such procedure involves a number of risks such as slipping, contamination, etc. During the procedure, use of gloves, goggles, boots provided with antiskid sole is recommended. If the equipment has been used, use also approved and appropriate breather mask.

- Do not enter in the 600 - liter reservoir. If necessary, call the specialized technical assistance.

- Before starting transportation, it is very important that the path over which the equipment will pass be carefully studies and that the agencies regulating such method of transportation be consulted regarding the precautions and current legislation.

- All highways, roads, local roads, ways and streets whose utilization characteristics are influenced by natural factors (climate, growth of tree without man's actions, etc.) and construction (material employed, height of bridges, nearness of electric networks, roadway width, etc.). Such characteristics shall be carefully evaluated prior to transportation of the equipment.

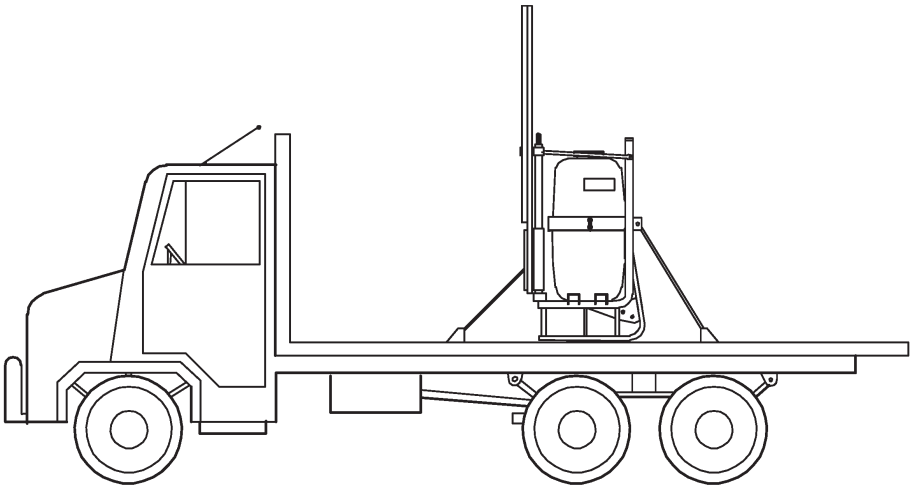
- If in doubt, do not transport the equipment. Hire a company specialized in that kind of service.

- Make sure that the chemical circuit has been washed and that the chemical reservoir has been entirely drained after such washing. Spill of setup leftovers, although minimal, can endanger the life of people, animals and cause serious damages to the environment.

- Wash the equipment on the outside after its use. Even if it appears to be clean, the ropes employed for fastening the equipment shall not be used again for binding foodstuff; they may be contaminated and, accordingly, contaminate such foodstuff.

- Make use of the PPEs when tying the equipment. If necessary, make a combined use of the mandatory PPEs for tying the equipment and the mandatory PPEs for application of the chemicals. That combination will reduce the risks of contamination during fastening of the equipment.

- Equipment fastening to the cart or truck shall be performed by the tying points (see figure below). Any tying carried out at random, while appearing to be safe and secure, is extremely dangerous and can cause serious accidents. If in doubt, contact Jacto.



Choosing the ideal tractor.....2-29
Setting up tractor 2-30
Connecting the PTO..... 2-32
Assembling the boom 2-35
Connecting the hoses 2-36

Choosing the tractor considering the hydraulic system lift capacity

The tractor should have lift capacity above the sum of the sprayer net weight (sprayer with empty tank) plus the weight equivalent to the tank capacity.

Weight with empty tank ..... 110 kg
Tank capacity ..... 400 L
Tractor recommended.....
..... Model with hydraulic system lift capacity above 510 kg

OBSERVATION:

The numbers above refer to the sprayers only. As for the tractor, please consult its operator's manual

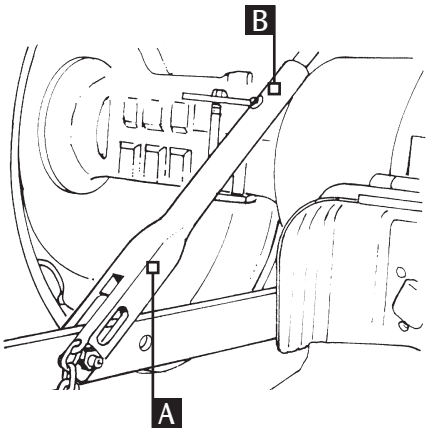
Adjusting parts to hitch to the tractor's three-point suspension

ATTENTION!

The instruction below is an example of what should be done for properly hitching the sprayer to the tractor's three-point suspension. To exemplify we have used the Ford 4600 tractor; so proceed as directed in the operator's manual of your tractor.

- Tie arm of the left bar

To adjust the length of the left lifting arm on the proper position, loosen the pin and turn the lower half (B) of the lifting arm.

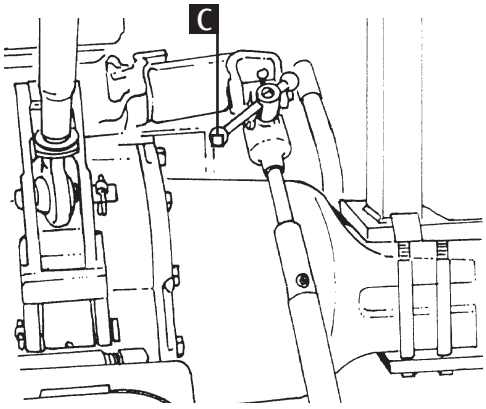


NOTE:

The grease fitting (A) should be upward.

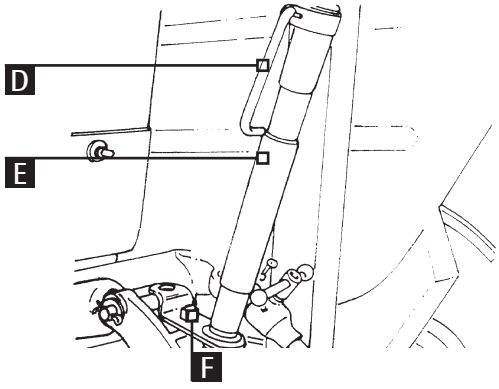
- Levelling box

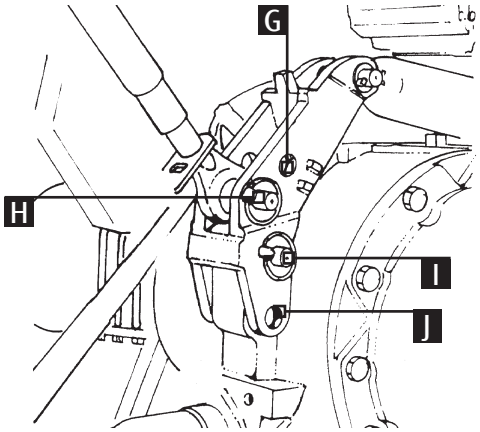
To adjust the transversal evelling of the sprayer, turn the crank (C) on the levelling box.



- Adjusting the third point

Release the lock (D) and turn the sleeve (E) to adjus the length of the third point arm. During transport, fasten the plate of the third point bar to the pin (F) of the frame.

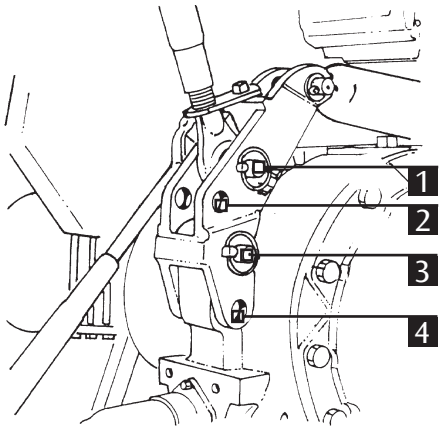




- **Third point frame**

  The third point frame has two positions (G and H) to install the third arm and two positions to install the frame lower pin.

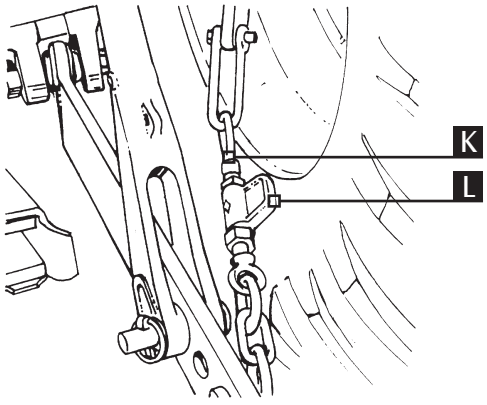
  Thus there are four different positions for this assembly.



- **Holes position**

  The positions of the holes vary according to the duty to be done.

Third arm's position	Frame	Duty kind
Nº 1	Nº 4	Ultra-light
Nº 1	Nº 3	Light
Nº 2	Nº 4	Medium
Nº 2	Nº 3	Heavy

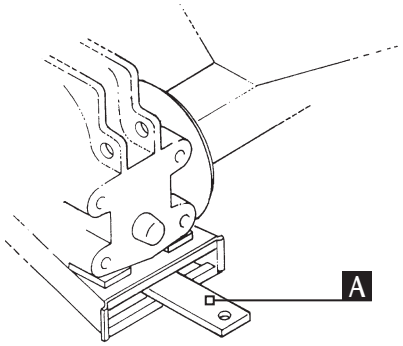


- **Stabilizing chains**

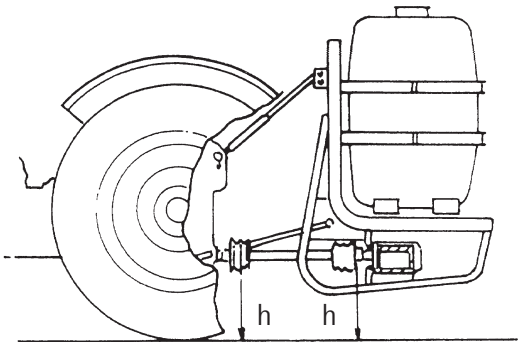
  The stabilizing chains should be installed to limit the sideward movement of the sprayer hitched to the three-point system.

  These chains should be adjusted according to the booms of the sprayer to be used. To adjust them, relieve the lock nut (K) and turn the adjusting nut (L), as necessary, and retighten the lock nut.

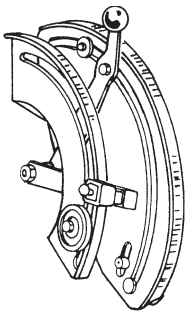
1. Remove or set aside the tractor drawbar (A).

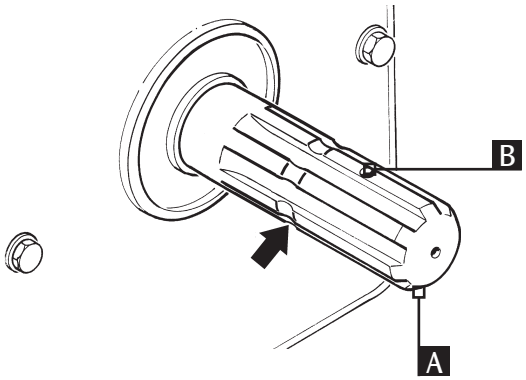


2. Mount the sprayer to the tractor three-point suspension and level it as shown



3. Adjust the tractor's hydraulic lift lever so that the sprayer is not raised too high.





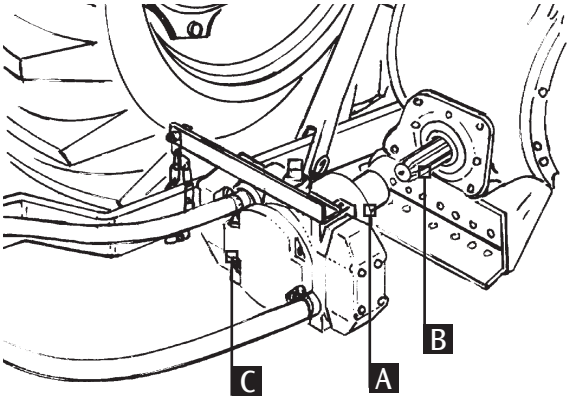
OBSERVATION:

Disengage the PTO and stop the tractor engine before this operation.

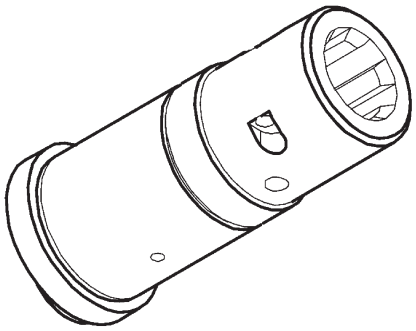
1. Connect the pump to the PTO.

NOTE:

Some imported tractors (Ex.: New Holland 55-86S) don't have hole for fastening the pump to the PTO splined shaft. Said hole is designed to receive the locking screw to lock the pump on the PTO shaft.

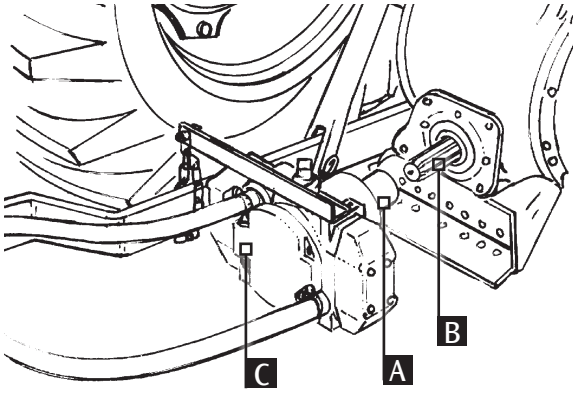


The lack of this hole to fasten the pump sleeve to the PTO shaft does not eliminate the possibility of a perfect connection since the JP-402 pump has a coupling sleeve designed to adjust the pump drive shaft to the tractor PTO.

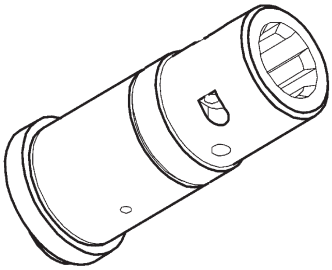


This adjustment does not jeopardize the safety and useful life of the equipment. The fastening is possible because of the screw fastening hole.

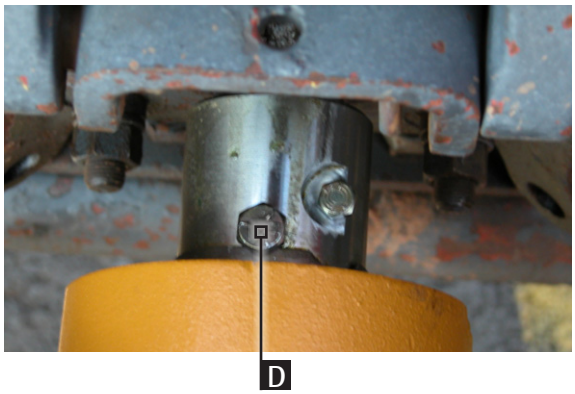
The figure below shows two ways of fastening this device to the PTO that can be used together or individually:



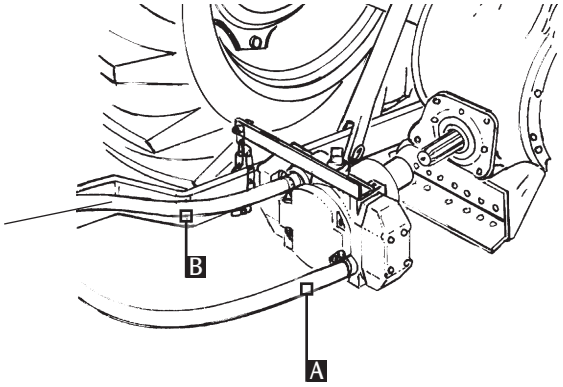
- Through the safety screw - Pass the hexagonal head safety screw 5/16” - 18 UNCx2.1/2” through the sleeve and the PTO shaft, and lock it with a hexagonal nut 5/16” - 18 UNC. This fastening is only possible for tractors having a hole on the PTO shaft. For this operation, the use of a lock washer Æ 8mm between the sleeve and hexagonal nut is required.



- Through the PTO fastening groove - Pass the screw M6 x 40 x 1.00 through the sleeve and lock it with a hexagonal nut M6 x 1.00. This screw will use the PTO fastening groove as lock to prevent the pump from coming off the PTO. This operation is recommended when there is no hole on the PTO shaft.



2. Next, fasten the chain to the arm of the tractor hydraulic lift as shown in the figure beside.

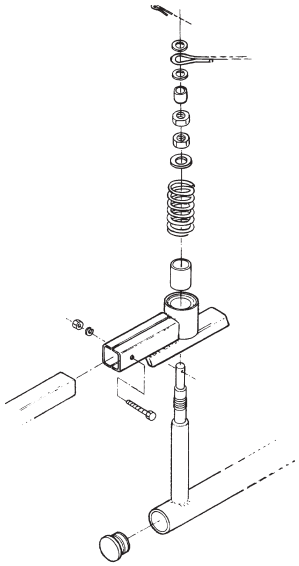


OBSERVATION:

The suction hose (A) must always be beneath the pressure hose (B).

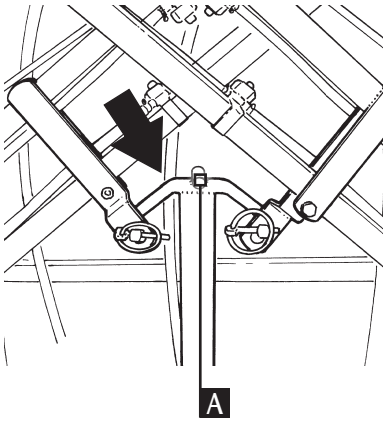
ATENTION!

Make sure the chain is well fastened and the fatening screws are tightened.



Procedure:

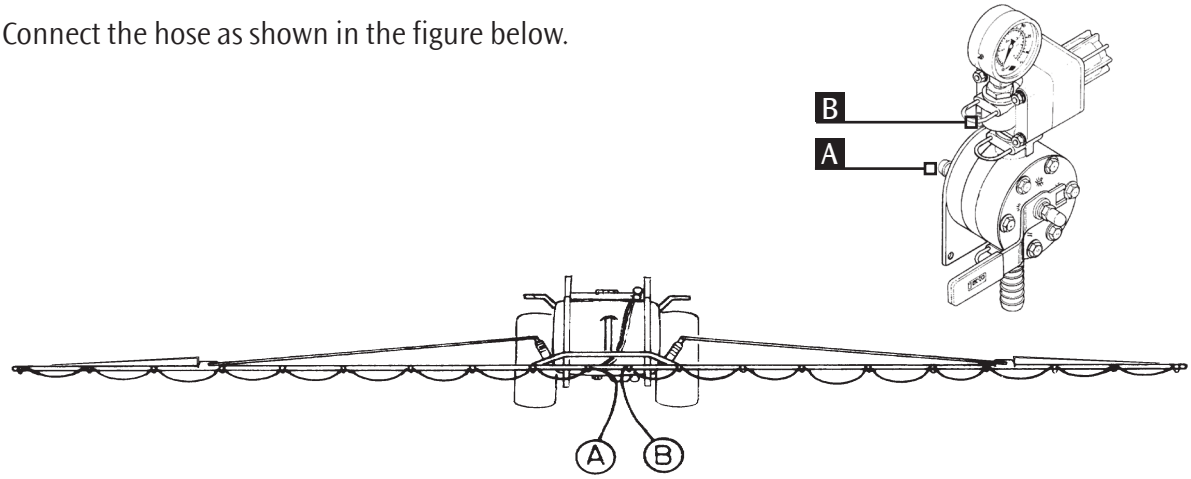
Mount the boom on the sprayer as shown in the figure below.

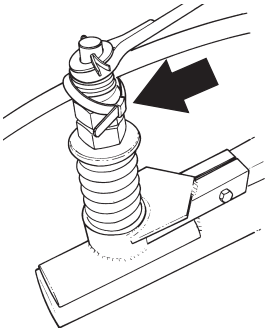


ATTENTION!

Folding the boom. The figure beside shows the correct position for folding the boom.
If you find difficulty to fold the boom because of the nozzles positioning, change the lock position to the pin (A).

Connect the hose as shown in the figure below.





NOTE:

After connecting the hose on the boom, fasten it with a clamp, so that it does not fold and affect the spraying results.

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Specifications Condorito 400 EM - 1/EM - 2..... 3-42
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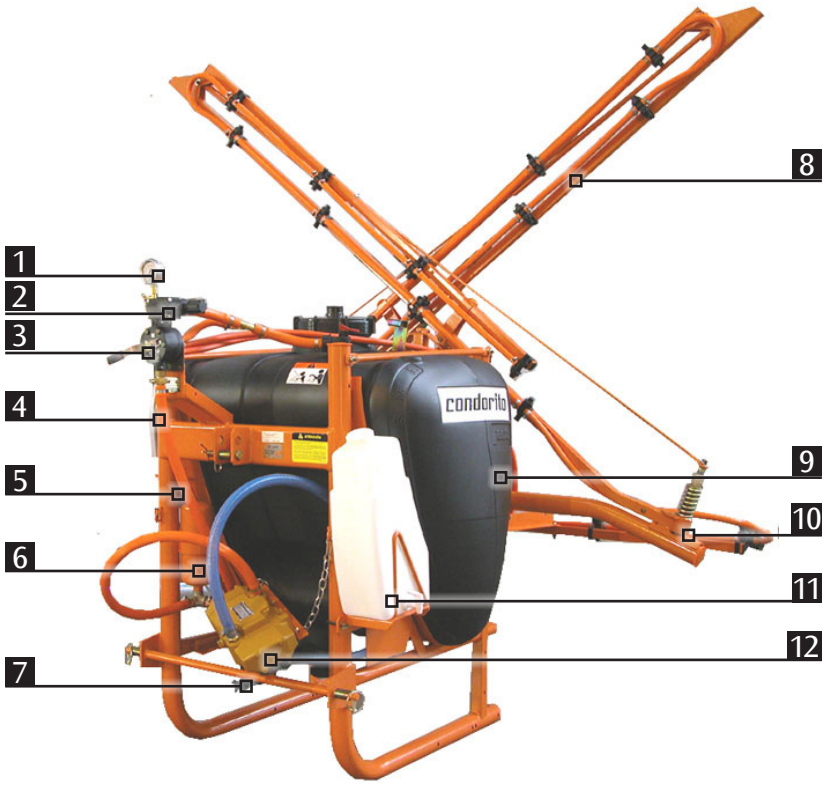
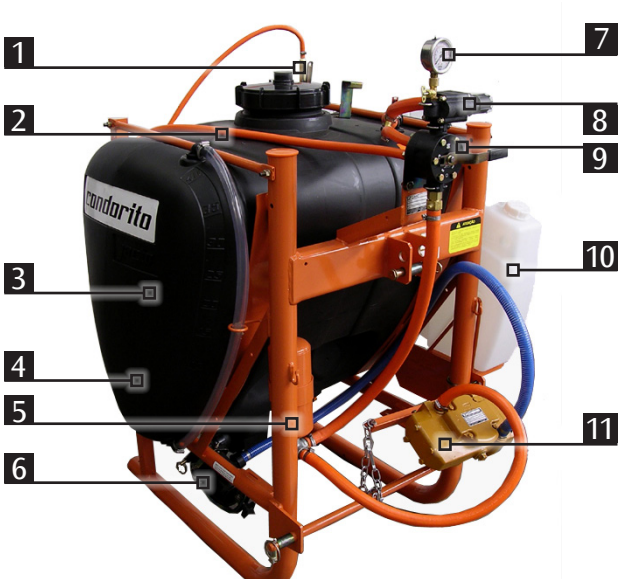
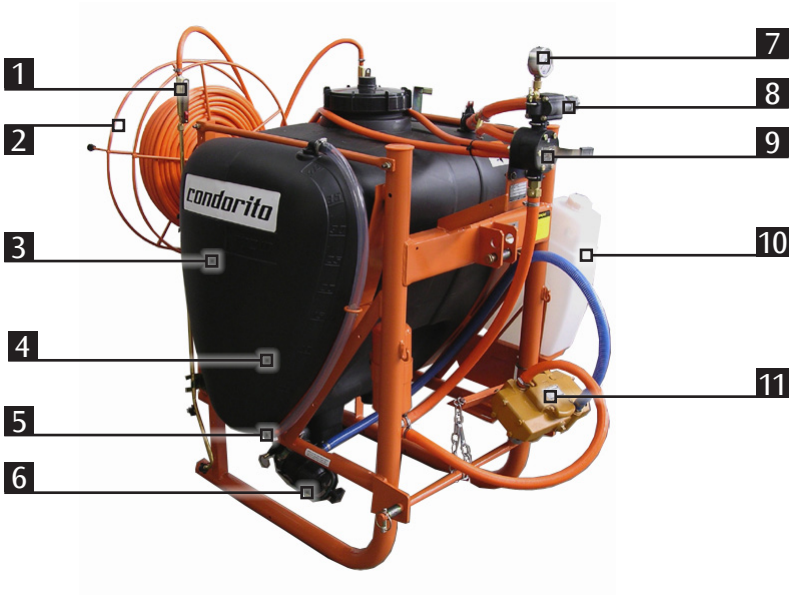


1. Pressure gauge
2. Pressure regulator
3. Chemical control
4. Level indicator
5. Pressure hose
6. Compensation chamber
7. Suction filter
8. Booms
9. Frame
10. Tank
11. Clean water tank
12. Chemical pump

Table 1: Specifications Condorito BX-10/35

	Condorito	Condorito BX 10/35
Weight		
Weight (kg)	110	110
Dimensions		
Length (m)	1.30	1.30
Width (m)	2.05	2.05
Height (m)	2.00	2.00
Tank		
Capacity (L)	400	400
Material	Polyethylene	Polyethylene
Clean water tank		
Capacity (L)	12	12
Material	Polyethylene	Polyethylene
Suction filter		
Model	FVS - 100	FVS - 100
Mesh	60	60
Chemical pump		
Model	JP-401	JP-401
Capacity (L/min)	38	38
Maximum pressure (kgf/cm²-psi)	21-300	21-300
Power consumption (HP)	2	2
Pressure gauge		
Model	Glycerin-filled	Glycerin-filled
Chemical control		
Model	CJ - 42 A	CJ - 42 A
Maximum pressure (kgf/cm²-psi)	10 - 150	10 - 150
Nozzles		
Nozzle holder model	Monojet single nozzle holder	Monojet single nozzle holder
Quantity	21	29
Nozzle model	JD-12 P	API - 110.015
Maximum pressure (kg/cm²-psi)	10 - 150	Up to 60
Spacing (cm)	50	35
Booms		
Folding	Crosswise	Crosswise
Length (m)	10	10
Actuation	Manual	Manual
Height (m)	Up to 1.30	Up to 1.30
Level indicator		
Tipe	Hose attached to tank	Hose attached to tank
Agitation		
Sistem	Hydraulic	Hydraulic
Filler unit		
Model (EJ-150)	Optional	Normal
Working speed (km/h)	2 to 6	2 to 6

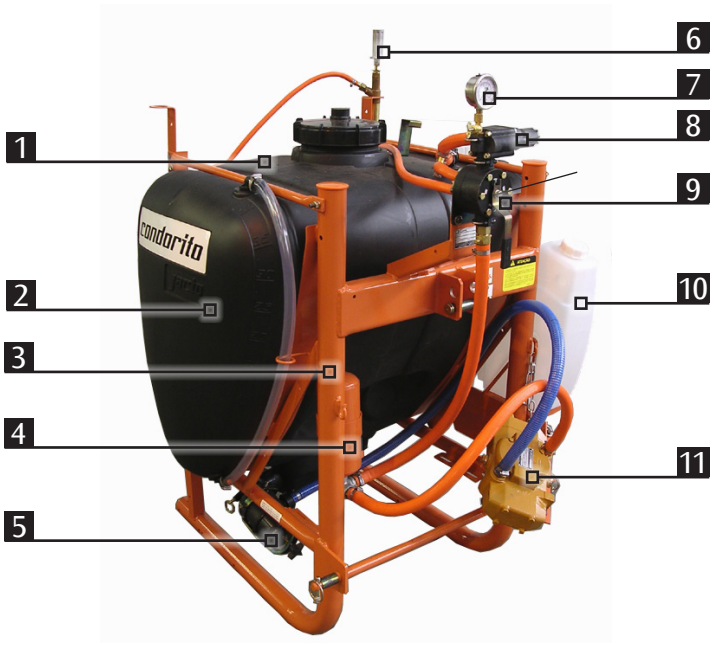


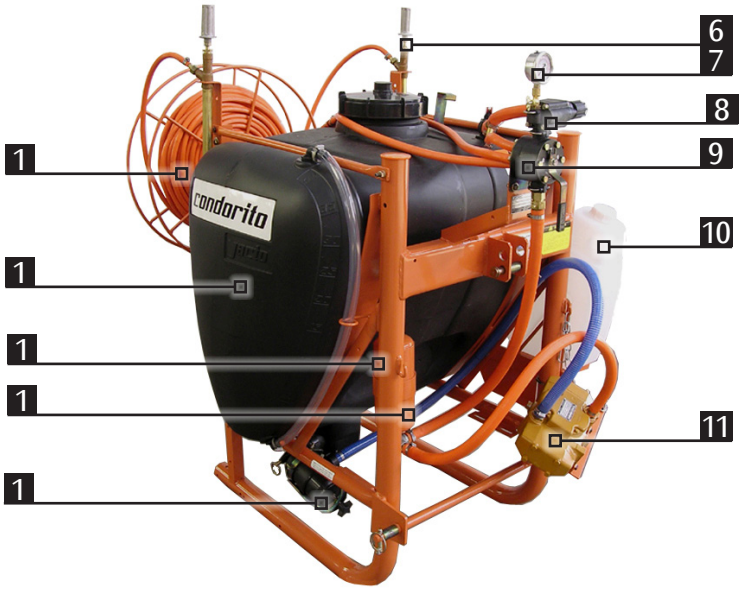


1. Spray lance LP 1130
2. Hose reel
3. Tank
4. Level indicator
5. Compensation chamber
6. Suction filter
7. Pressure gauge
8. Pressure regulator
9. Chemical control
10. Clean water tank
11. Chemical pump

Table 2: Especificações técnicas Condorito 400 EM - 1/EM - 2

	Condorito EM-1	Condorito EM-2
Weight		
Weight (kg)	105	110
Dimensions		
Length (m)	1.30	1.30
Width (m)	1.10	1.10
Height (m)	1.30	1.30
Tank		
Capacity (L)	400	400
Material	Polyethylene	Polyethylene
Clean water tank		
Capacity (L)	12	12
Material	Polyethylene	Polyethylene
Suction filter		
Model	FVS - 100	FVS - 100
Mesh	60	60
Chemical pump		
Model	JP - 401	JP - 401
Capacity (L/min)	38	38
Maximum pressure (kgf/cm²-psi)	21 - 300	21 - 300
Power consumption (HP)	2	2
Pressure gauge		
Model	Glycerin-filled	Glycerin-filled
Chemical control		
Model	CJ - 42 C	CJ - 42 A
Hose reel		
Hose diameter and length (m)	3/8” / 50	3/8” / 50
Spray lance		
Model	LP 1130	LP 1130
Nozzles	JA - 2	JA - 2
Maximum pressure (kgf/cm²-psi)	14-200	14-200
Level indicator		
Tipe	Hose attached to tank	Hose attached to tank
Agitation		
Sistem	Hydraulic	Hydraulic
Filler unit		
Model (EJ-150)	Optional	Optional
Working speed (km/h)	2 to 6	2 to 6

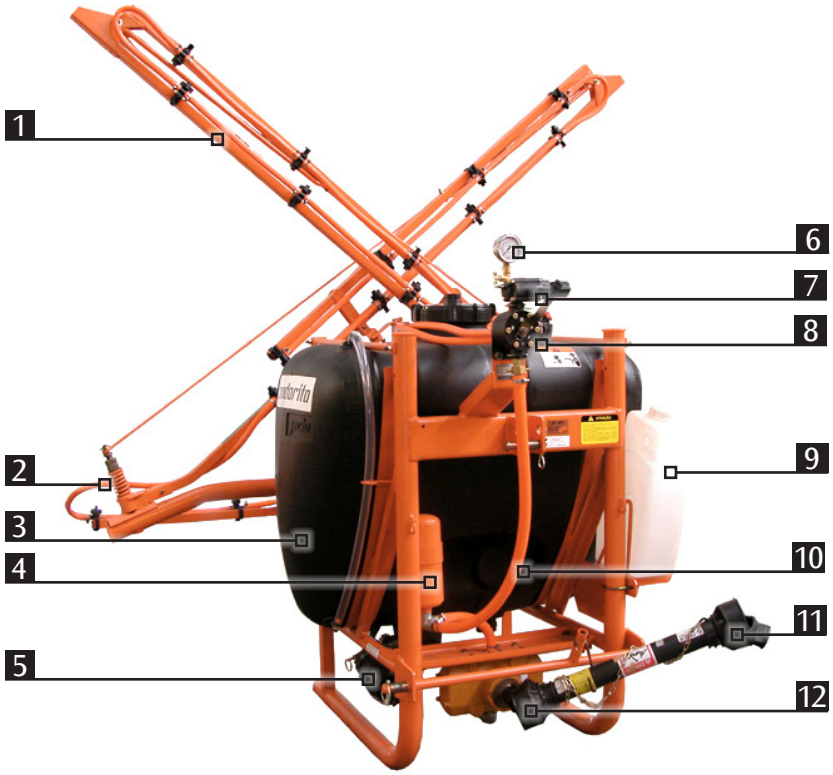




1. Hose reel
2. Tank
3. Level indicator
4. Compensation Chamber
5. Filter
6. Spray gun
7. Pressure gauge
8. Pressure regulator
9. Chemical control
10. clean water tank
11. Chemical pump

Table 3: specifications Condorito 400 EM-1P / EM-2P

	Condorito EM-1 P	Condorito EM-2 P
Weight		
Weight (kg)	105	110
Dimensions		
Length (m)	1.30	1.30
Width (m)	1.10	1.10
Height (m)	1.30	1.30
Tank		
Capacity (L)	400	400
Material	Polyethylene	Polyethylene
Clean water tank		
Capacity (L)	12	12
Material	Polyethylene	Polyethylene
Suction filter		
Model	FVS - 100	FVS - 100
Mesh	60	60
Chemical pump		
Model	JP - 401	JP - 401
Capacity (L/min)	38	38
Maximum pressure (kgf/cm²-psi)	21/300	21/300
Power consumption (HP)	2	2
Pressure gauge		
Model	Glycerin-filled	Glycerin-filled
Chemical control		
Model	CJ - 42 C	CJ - 42 A
Hose reel		
Hose diameter and length (m)	3/8” / 50	3/8” / 50
Spray gun		
Quantity	1	2
Nozzles	Staineless steel-Series D	Staineless steel-Series D
Maximum pressure (kgf/cm²-psi)	28 - 400	28 - 400
Minimum flow rate (L)	5	5
Maximum flow rate (L)	45	45
Spray swath (m)	15	15
Level indicator		
Tipe	Hose attached to tank	Hose attached to tank
Agitation		
Sistem	Hydraulic	Hydraulic
Filler unit		
Model (EJ-150)	Optional	Optional
Working speed (km/h)	2 to 6	2 to 6



1. Booms
2. Frame
3. Tank
4. Compensation chamber
5. Suction filter
6. Pressure gauge
7. Pressure gauge
8. Pressure regulator
9. Tank
10. Pressure hose
11. PTO shaft
12. Chemical pump

Table 4: specifications Condorito/BAC

Weight	
Weight (Kg)	110
Dimensões	
Length (m)	1.30
Width (m)	2.05
Height (m)	2.00
Tank	
Capacity (L)	400
Material	Polyethylene
Suction filter	
Model	FVS-100
Mesh	60
Chemical pump	
Model	JP-402
Capacity (L/min)	38
Maximum pressure (kgf/cm²-psi)	21 - 300
Power consumption (HP)	2
Pressure gauge	
Model	Glycerin-filled
Chemical control	
Model	CJ-42 A
Maximum pressure (kgf/cm²-psi)	10-150
Nozzle	
Nozzle holder model	AGS
Quantity	21
Nozzle model	JD-12 P
Maximum pressure (kg/cm²-psi)	10 - 150
Spacing (cm)	50
Booms	
Folding	Crosswise
Length (m)	10
Actuation	Manual
Height (m)	Up to 1.30
Level indicator	
Type	Hose attached to tank
Agitation	
Sistema	Hydraulic
Filer Unit	
Model (EJ - 150)	Optional
Working speed (km/h)	2 a 6

Chemical pump 4-49
Suction filter 4-49
Pressure regulator 4-50
Spray nozzles 4-51
Spray lance LP-1130 4-52
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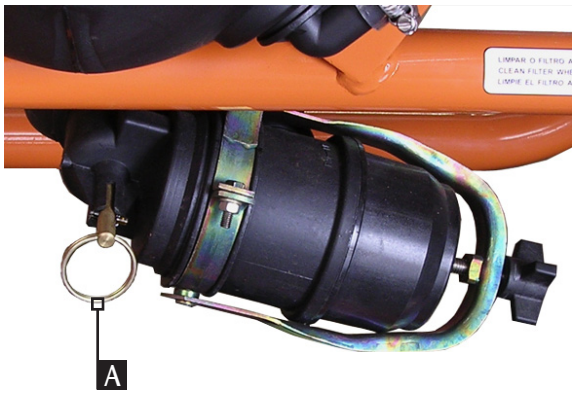


Located between the tank and pump, the suction filter is specifically designed to prevent dirt or impurities from reaching the pump.

It has an easy-to-reach shut off valve (A) which stops the liquid flow to allow filter cleaning, filtering elements changing and/or pump maintenance.

This shut off valve must remain open while the sprayer is running. If it remains closed, you will hear an unusual noise in the pump.

Chemical pump

With capacity of 38 liters per minute at 540 rpm, the JP-401 pump can work under pressure of up to 21 kgf/cm² (300 psi).

It has two ceramic sleeves that ensure efficient applications and greater resistance to chemical abrasion.

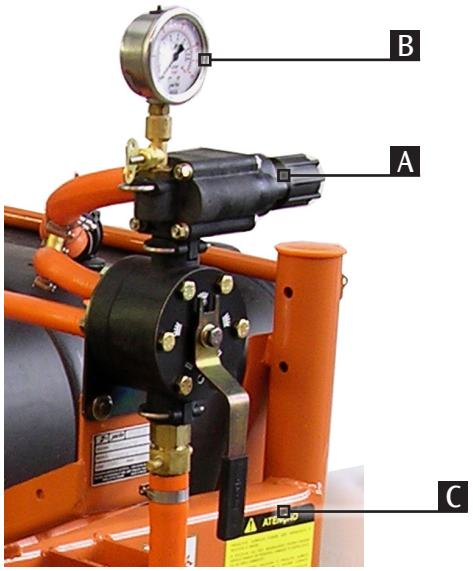
The JP-401 pump body is made of aluminum because it is connected directly with the tractor's PTO.

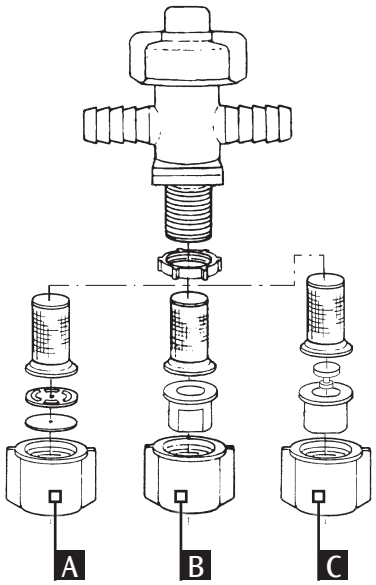
Table 5: chemical pump

Pump model	Capacity (l/min at 540 rpm)	Maximum working pressure	
		lbf/pol²	kgf/cm²
JP-401	38	300	21
JP-402	38	300	21
JP-42	42	400	28
JP-75	75	400	28
JP-100	100	400	28
JP-150	150	400	28
JP-300	300	400	28

Pressure regulator

This pressure regulator (A) provides calibrations ranging from 1 to 21 kg/cm² (14 to 300 psi), indicated by the pressure gauge (B). The lever (C) turns on and off the chemical flow to both right and left boom or to one only. This makes the spray applications easier and more economical.





The nozzles have the job to generate droplets and distribute them over the surface being sprayed.

Flow, angle and droplet sizes vary according to working pressure.

Operating with pressure over that recommended by the manufacturer will decrease the nozzles' life.

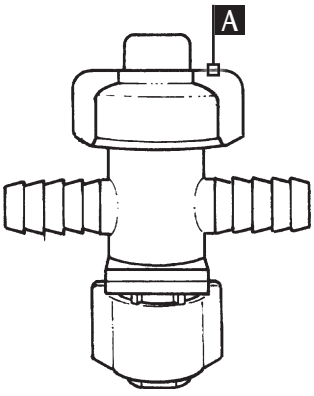
The nozzles used on this sprayer are made of stainless steel or ceramic and are mounted as shown in the figure beside.

Na máquina, os bicos de pulverização (A (bico cone de aço inox) B (bico leque de cerâmica), C (bico cone de cerâmica)), os elementos filtrantes e as capas do bico devem ser montados como mostram as figuras.

NOTE:

Operating with pressure below or over that recommended by the manufacturer can alter the nozzles working characteristics.

Monojet nondrip single nozze holder



This nozzle holder can be mounted with a ceramic cone or flat fan nozzle. It has a nondrip valve (A) which shuts the flow off when the pressure drops to 10 psi, thus preventing it from dripping.

Spray lance LP-1130 CONDORITO 400

CONDORITO: EM-1 / EM-2

This spray lance is a component designed for spot spray applications, as well as for applications to trees being grown in difficult of access places.

It has a brass trigger valve (A) and two ceramic cone nozzles (B) and is recommended for applications under pressure of up to 14 kg/cm² (200 psi).

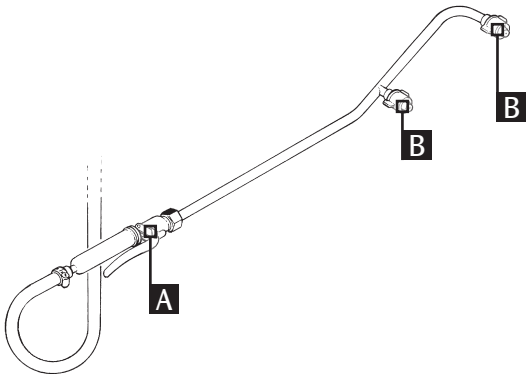


Table 6: Pressure and flow rate JA-2

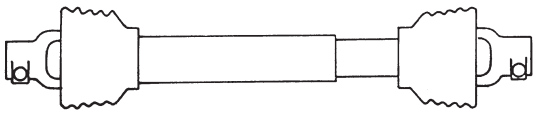
Nozzle	Pressure (psi)	Flow rate/ nozzle	Flow rate/ lance
JA-2	150	1.00	2.00
	200	1.16	2.32
	300*	1.42*	2.84*
	400*	1.64*	3.28*

** Non recommended pressure.*

PTO Shaft

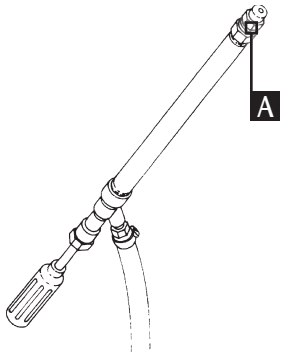
Condorito/BAC

It has plastic protection guards along all its parts to provide more security to the operator. These guards prevent the rotating parts from contacting the operator and his clothes and plants as well. Do not remove these protection guards.



NOTE:

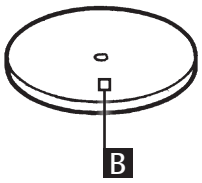
For instruction in detail, refer to the section MAINTENANCE - PTO SHAFT.



The spray gun is an accessory for localized spot spraying in tall trees which requires a high spraying volume.

It is possible to increase the gun flow rate from 5 to 45 L/min by replacing the spray discs (A).

Stainless steel spray discs - Série - D



The spray discs (B) are recommended for localized spot spraying in fruit crops in general due to its long reach spray. They are made of stainless steel and have flow rates ranging from 5 to 45 L/min.

These discs must be used with the Jacto spray gun, specialle designed for this type of spray application.

Table 7: Spray discs flow rate table - series D

Spray disc part nº	Spray disc model	Pressure (psi)				
		100	150	200	300	400
		Spray gun flow rate (l/min)				
202275	D - 5	5,20	6,00	7,00	8,00	9,50
202267	D - 6	6,85	8,50	10,00	12,00	13,50
202811	D - 7	9,35	10,90	12,50	14,75	17,00
202259	D - 8	12,85	15,00	17,00	20,00	23,65
622829	D - 9	14,20	17,64	20,72	25,40	29,40
114686	D - 10	18,50	22,00	25,50	30,00	35,68
622837	D - 11	21,00	24,75	29,35	37,00	45,00

Clean water tank for washing hands

This is a 12-liter plastic tank located in a place of easy access which must always be filled up with clean water for washing hands and other parts of body that have touched chemicals during the use of these products.

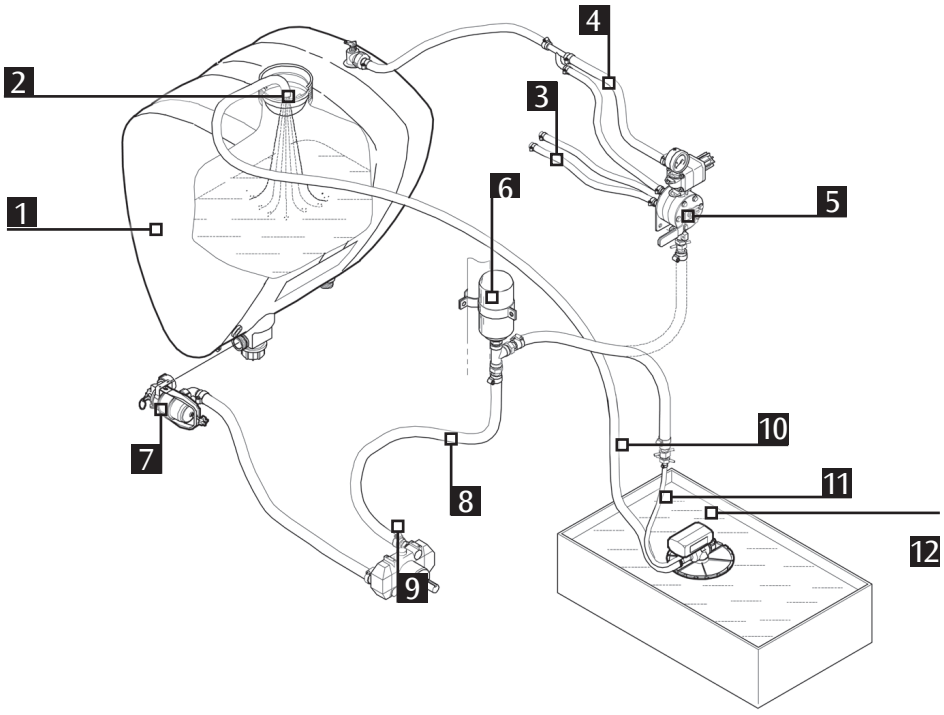
ATTENTION!

Non-drinkable water. Only use the water from this tank to wash hands and other parts of the body that have touched chemicals.

ATTENTION

The sprayer filling operation must be made in places designed or appropriate for this purpose or by means of appropriate vehicles (trucks, trailers, etc.).
Never collect water from rivers, lakes, dams, streams, brooks, etc. Using the sprayer's return system.

- Put 20 liters of water in the tank. Disconnect the hose (10) from the chemical control and connect it with the filler unit hose (11).
- Put the filler unit (12) into the water tank and the end of its discharge hose (4) in the tank opening.
- Run the pump with 540 rpm. After finishing the filling operation, connect again the hose (1) with the chemical control.
- Pour the agrochemical into the tank and run the sprayer for five minutes to make the mixture homogeneous before starting to spray.



1. Tank
2. Strainer
3. Boom
4. Return
5. Compensation chamber
6. Compensation chamber
7. Filter
8. Chamber hose
9. Pump
10. Chemical control hose
11. Filer unit hose
12. Filer unit

A successful spray application does not depend only on a good sprayer or correct use of the chemicals but also on factors to be determined in the field under specialized orientation.

Among these factors, some concepts should be part of a criterion of evaluation so that positive results may be attained within the pest control program.

Ideal time

The ideal time for spraying should be chosen according to the chemical product characteristics, as well as to the field conditions:

- Infestation level of pests, diseases and weeds;
- Infection level of diseases;
- Growing stage of weeds;
- Weather conditions.

Safety

When spraying your crops, you must make sure there will be no risk to people, animals and environment. Avoid spraying at hotter times, with humidity below 55% or under windy conditions.

Do not allow the operator to handle chemicals and spraying machinery without the proper individual protective clothing.

Correct application rate

Any type of application requires that the rate be maintained during the whole spraying work. This will be possible when you have a good sprayer properly calibrated.

This calibration can be obtained through practical methods or formulas. Please refer to the section OPERATION AND ADJUSTMENTS - CALIBRATING THE SPRAYER.

Good coverage

You have a good coverage when the whole target is sprayed with uniform distribution, with no risk to the environment and with good results in the pest control.

The application rate does not have influence on the treatment results. Therefore good coverages can be attained even with different rates, which may vary according to operational and regional factors.

ATTENTION!

Read carefully and follow strictly the instructions on the chemicals manufacturer's label.
Always follow directions of a technician when handling and applying chemicals.
Always make sure the sprayer is in good operational conditions before starting the spraying job and employ a well trained operator.

The safety of people, animals and environment depends on correct spray appications. Therefore, we list below important operational procedures.

When handling chemicals:

- Follow strictly the instructions on the labels.
- Use individual protective clothing.
- Do not eat, drink or smoke.
- Choose a ventilated place.
- Wash with water and soap the parts of the body touched by chemicals.

When operating sprayer:

- Check for the proper working conditions of the sprayer.
- Do not blow by mouth nozzles, valves or tubes.
- Do not spray against the wind.
- Do not spray at sunny times
- Use individual protective clothing recommended.

OBSERVATION:

You are responsible for the success of the application.

The sprayer can be calibrated through the formula below or through the calibrator bottle as shown in the next page.

Calculating the spraying volume through formula

$$V = \frac{F \cdot 600}{S \cdot A} \quad (L/ha)$$

Where:
V : Spray volume (L/ha)
F : Nozzle flow rate (L/min)
A : Nozzle spacing (m)
S : Tractor speed (km/h)
600 : Conversion unit

Example:
Nozzle flow rate . 0.87 l/min at 100 psi (JD-12-P nozzle)
Nozzle spacing .... 0.5 m
Working speed .... 4.0 km/h

$$V = \frac{F \cdot 600}{S \cdot A} \quad (L/ha)$$

$$V = \frac{0{,}87 \cdot 600}{0{,}5 \cdot 4} \quad (L/ha)$$

$$V = \frac{522}{2} = 261 \text{ L/ha}$$

OBSERVATION:

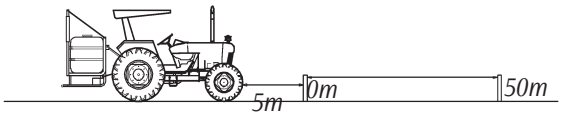
The numbers shown in the above example are illustrative. The correct calibration should be done according to instructions of a technician.

Calibrating the sprayer through the calibrator bottle

Before calibrating the prayer check the following:

- Suction filter: dirts;
- Hoses: twisted or bored;
- Pressure regulator components (valve seat, valve and spring): wear or dirts;
- Pump: proper lubrication (oil level and grease) and leakages;
- Nozzles: same model, wear, flow rate, strainers.

Uma vez verificado todos os ítens, inicia-se a calibração do pulverizador



1. Mark off 50 meters on the ground to be sprayed.
2. Fill the sprayer's tank.
3. Choose the operating gear.
4. Engage the PTO.
5. Accelerate until reaching 540 rpm at the PTO.
6. Start moving at least 5 meters before the initial mark.
7. Note the time it takes the tractor to travel 50 meters.
8. On irregular terrain, repeat this operation several times and take the average.

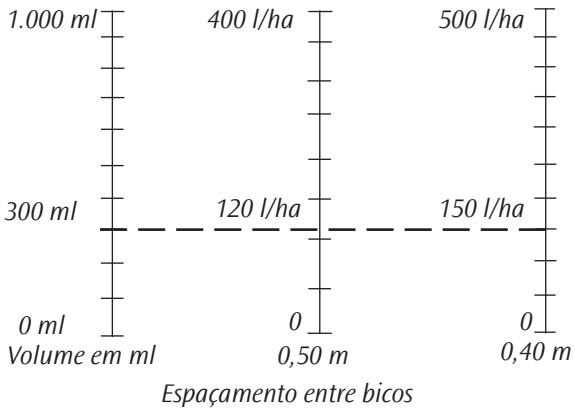
9. Stop the tractor with the rotation used to travel the 50 meters, open the nozzles and adjust the pressure according to the recommendation for the different types of nozzles:

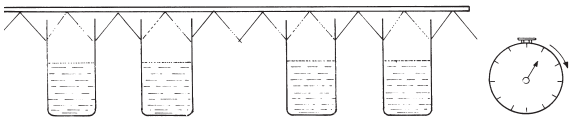
- Cone nozzles - from 45 to 200 psi
- Flat fan nozzles - from 15 to 60 psi
- Deflector nozzles - from 15 to 30 psi

10. Use the calibrator bottle to collect the nozzle spray volume during the same time taken to travel the 50 meters, and read on the column correcponding to the nozzle spacing.

11. Repeat this operation with several nozzles to obtain an average volume.

12. The average obtained wil be the spray volume for the gear and pressure already determined.





OBSERVAÇÃO:

If the spray volume obtained is below that desired, increase the pressure, decrease the speed (but keep 540 rpm at PTO) or change the nozzles for others of higher flow rate.
If the spray volume is above that desired, decrease the pressure, increase the speed (but keep 540 rpm at PTO) or change the nozzles for others of lower flow rate.
If it is necessary to carry out any of the above procedures, repeat the calibration procedure.

Calibrating the sprayer through a practical method

Before calibrating the sprayer equipped with gun or lance check the following:

- Suction filter: dirts;
- Hoses: twisted or bored;
- Pressure regulator components (valve seat, valve and spring): wear or dirts;
- Pump: proper lubrication (oil level and grease) and leakages;
- Nozzles: same model, wear, flow rate, strainers.

Before checking, proceed with the calibration as follows:

1. When there is not enough space between the rows for the tractor to enter, determine the spray swath by measuring the crop spacing and dividing by the number of times the sprayer passes between the same rows (e.g.: 4 m between rows ÷ 2 times = 2 m spray swath).

2. On beds (e.g.: vegetables), the spray swath will be equal to the bed width multiplied by the number of beds sprayed simultaneously (e.g.: 1 m bed width x 3 beds sprayed simultaneously = 3 m spray swath).

3. When the tractor enters the space between the rows, the spray swath can vary depending on the quantity of lance or gun used for spraying. If using one spray lance or gun, the spray swath is the crop spacing divided by two (e.g.: 4 m between rows ÷ 2 = 2 m spray swath). If using two spray lances or guns, the spray swath is equal to the crop spacing (e.g.: 4 m between rows = 4 m spray swath). If there is need to use two operators on the same side of the crop, each with a spray gun or lance, the spray swath can be determined by dividing the crop spacing by two (e.g.: 4 m crop spacing ÷ 2 = 2 m spray swath).

4. To know how many meters need to be sprayed to cover 100 m², divide 100 by the spray swath measured (e.g.: 100 ÷ 2 m spray swath = 50 m, which is the distance to be sprayed).

5. Fill the sprayer tank.

6. Choose the operating gear.

7. Engage the PTO.

8. Accelerate until reaching 540 rpm at the PTO.

9. Note the time (seconds) it takes to spray the distance previously obtained in “item 4” (e.g.: 50 m) at a comfortable speed, which is sustainable on the normal conditions of the area (acclivity, declivity, obstacles, etc.) to be sprayed during the normal time of work.

10. Repeat this operation twice and take the average, adding time 1 and time 2 and dividing by two (e.g.: time 1 = 29s; time 2 = 31s; 29 + 31 = 60s; 60 ÷ 2 = 30s average, that is the time it takes to spray the distance previously obtained in “item 4”, which is 50m).

11. Stop the tractor with the rotation used to travel the 50 m, run the sprayer, pull the trigger (lance LP-1130) or turn the knob on (gun) to begin the spraying and adjust the pressure according to the recommendation for the nozzle type:

- Cone nozzles: from 45 to 200 psi
- Flat fan nozzles: from 15 to 60 psi

- Deflector nozzles: from 15 to 30 psi
- Stainless steel nozzles series D: from 100 to 400 psi

12. Collect the spraying volume in a container during the time determined (e.g.: 30s according to “item 9”).

13. Measure the spraying volume in a graduated bottle.

14. Repeat this operation twice and take the average (e.g.: 5 liters)

15. To determine the spraying volume in 1 hectare, multiply 100 by the volume sprayed in 100 m² (e.g.: sprayed volume = 5 liters x 100 = 500 L/ha spraying volume).

16. Contact an agronomist and read the product instructions to check if the volume is inside the recommended limits. If the volume varies 10% from the recommended volume, proceed as follows:

    a. If the spraying volume is below that desired, increase the pressure, decrease the speed (but keep 540 rpm at PTO) or change the nozzles for others of higher flow rate.

    b. If the spraying volume is above that desired, decrease the pressure, increase the speed (but keep 540 rpm at PTO) or change the nozzles for others of lower flow rate.

- If it is necessary to carry out any of the above procedures, repeat the calibration procedure.

- When the recommended product dosage is concentrated (e.g.: 150 ml/100 L water), check the proper spraying volume through the beginning of the chemical flow, in case of foliage, or the desired droplet concentration.

17. Contact an agronomist and read the product instructions to identify the recommended dosage.

- If the dosage is recommended in hectare (e.g.: 2.5 L/ha), calculate the necessary quantity of product for each filling operation in relation to the sprayed volume. For example, if the tank capacity is 400 liters and the spraying volume is 500 L/ha, the necessary quantity of product is (400 ÷ 500) x 2.5 = 2.0 liters product per tank.

- If the dosage is recommended in concentration (e.g.: 150 ml/100 L water), calculate the necessary quantity of product for each filling operation in relation to the tank capacity. For example, if the tank capacity is 400 liters, the necessary quantity of product is (400 ÷ 100) x 150 = 600 ml product per tank.

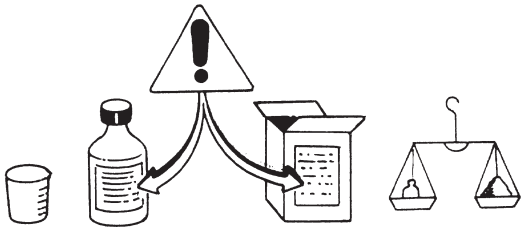
ATTENTION!

Working with the sprayer with less than 50 liters of water on the tank can cause serious damage to the pump. Never operate the sprayer for a prolonged time with less than 50 liters of water on the tank.

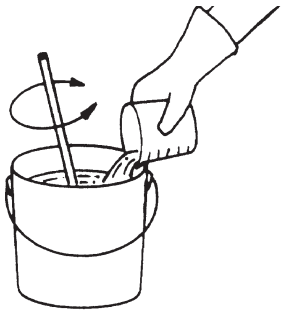
Always use the following individual protective clothing when handling chemicals:

- Impermeable wide-brimmeed hat
- Goggles
- Mask
- Long-sleeved working clothes
- Impermeable gloves
- Impermeable boots

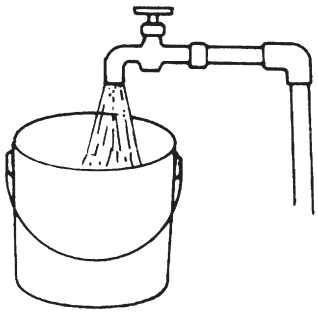
1. Carefully read the chemical product leaflet.



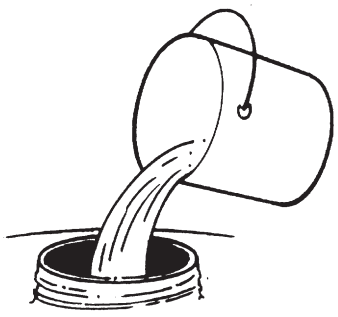
2. Put the product in a recipient with a little amount of water. Shake the mix.



3. Add the amount of water that is needed to fill out the recipient.
4. Shake until a homogenous mix is achieved.

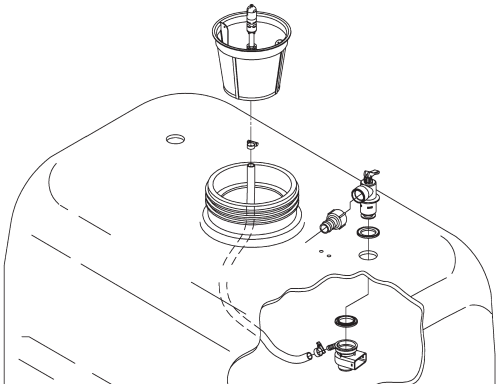


5. Add the mix prepared to the working recipient.
6. Mount the lid of the working recipient and make sure it has no leaks.



ATTENTION!

During handle and use of chemical products, always follow the technical guidelines.



The chemicals are packaged in appropriate containers for each type of product.

After emptying the containers, they must be discarded in a safety way, in order not to poison the man and the environment.

It is very important, before any discard of empty containers, to remove the residues of the product that are sticked inside it and make it useless by piercing it.

Metal, plastic and glass containers must be rinsed for decontamination.

To facilitate this important operation, Jacto has installed on its trailed sprayers a suitable device that rinses internally the containers with pressurized water, eliminating most of the residues.

Procedures

- Fill the chemical tank up to approximately 50% of its capacity.
- Pour the chemical into the tank.
- Engage the tractor PTO.

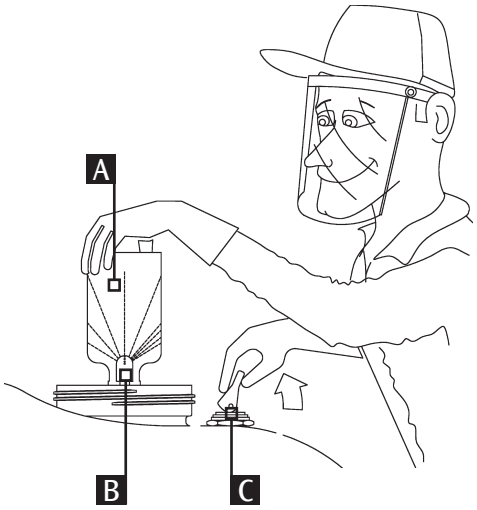
NOTA:

The relief lever of the chemical control must be set to allow the chemical return to the tank (off) and the suction filter valve must be with the arrow turned to the main tank.

ATENÇÃO!

Use the recommended protective clothing for this operation.

Hold the chemical container (A) over the rinse nozzle (B) and pull the directional valve lever (C) to wash inside the container.



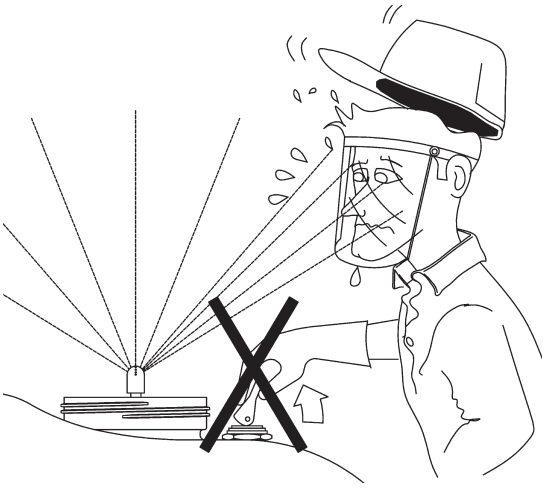
OBSERVATION:

With the chemical container over the rinse nozzle, make circular movements to reach all internal walls of the chemical container with the water jet for around 30 seconds.

Fill up the sprayer tank with water.

ATTENTION!

Never pull the directional valve without the chemical container over the container rinse nozzle.



After rinsing the chemical container, wash it for the last time.

Container rinse

- Fit the container cap and tight it very well to avoid leakage during the agitation.
- Agitate the container strongly in all ways (horizontal and vertical), during approximately 30 seconds to remove the residues that are sticked to the container internal walls.
- Take the container cap off and carefully pour the rinse water into the spray tank.
- Keep holding the container over the spray tank opening until the last drop.
- Repeat this operation twice more, thus completing the triple wash.
- Next, make the container useless by piercing it. Make sure their labels are not damaged for identification

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- Daily, after finishing the spraying, put clean water in the tank, remove the nozzles and run the sprayer till empty.
- Remove, clean and replace the nozzles and the filters.
- Clean the main filter.
- Wash the outside and inside of the sprayer.
- These procedures will avoid problems with the sprayer in future application such as: obstruction of the filters, nozzles, extensions and ducts, as well as protect your llife.
- Take off and wash all the individual protective equipment.
- Wash the working clothes separately from other clothes.
- Take a shower with plenty of water and soap and put clean clothes on.

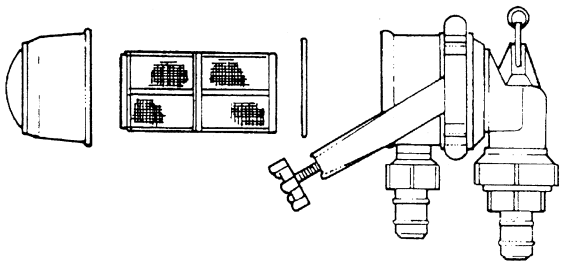
ATTENTION!

Never wash sprayers or protective clothing rivers, lakes, streams, brooks, dams, etc.

Suction filter

The frequency of filter cleanings depends on the quality of water and type of chemicals used.

Clean the suction filter whenever filling the tank or necessary.

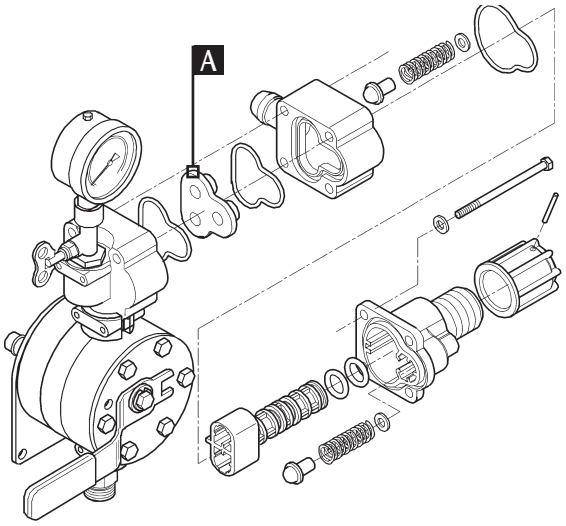


Pressure regulator

Disassemble it every 100 working hours.

Check for wear on the diaphragm, valve and valve seat.

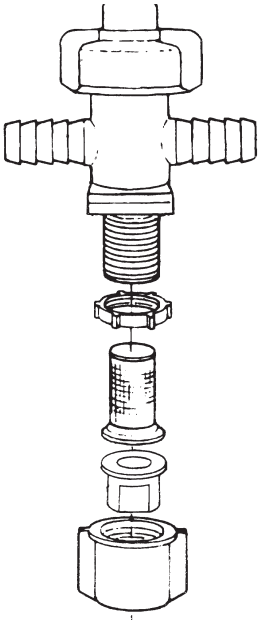
Replace the parts if necessary.



ATTENTION!

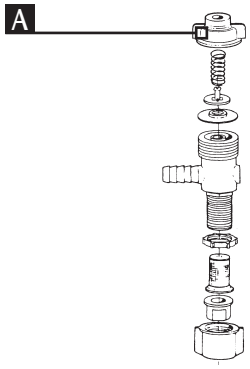
The pressure regulator nut (A) comes off the assembly line locked. Never loosen it when servicing this component so that the control pressure is not changed.

AGS nondrip single nozzle holder



Clean the nozzles and strainers daily or whenever necessary.

Nozzle maintenance



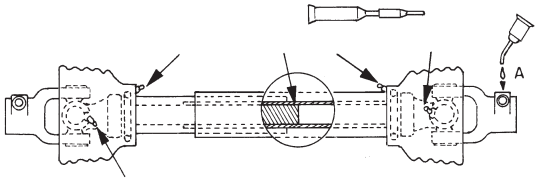
After prolonged use, it may be necessary to service the non-drip valve. Please refer to the table below.

Table 8: Problem, causes e corrections

Problem	Causes	Corrections
Valve does not seal	a. Improper tightening of nut (A).	a. Tighten the nut (A).
	b. Impurities on the diaphragm.	b. Remove and clean the diaphragm.
	c. Rupture of the diaphragm.	c. Replace the diaphragm.
	d. Rupture of the diaphram followed by chemicals buildup.	d. Replace the diaphragm and clean the cup.

PTO Shaft

- Lubricate daily

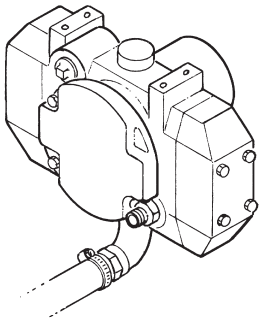


ATTENTION!

Before using the equipment for the first time, clean and lubricate every point of the PTO shaft, as shown in the picture beside, with Lithium-based grease NGLI-2 (for further information about the greases, refer to the lubrication table).

Pump

Lubricate the pump daily using the grease recommended in the lubrication table above.



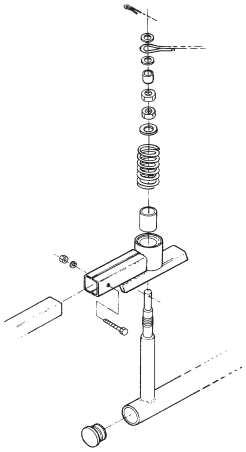
NOTE:

For maintenance in detail (replacement of piston cups, bearings, etc.), contact your Jacto dealer.

Boom joint

Lubricate every 100 working hours.

- CONDORITO
- CONDORITO BX10/35
- CONDORITO/BAC



Hose reels (Condorito EM-1/EM-2)

Lubricate every 100 working hours.

Table 9: lubrification

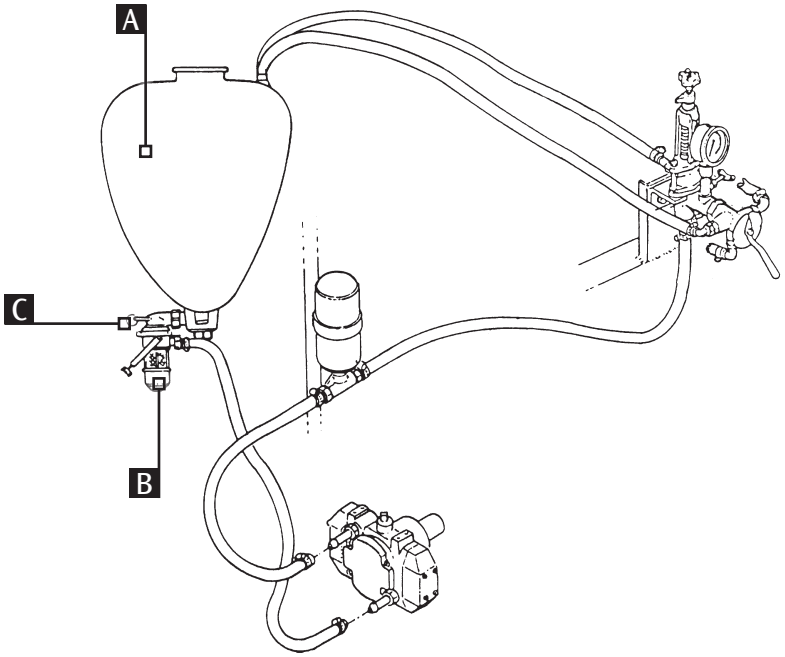
Product	Location	Frequency	Specification	Recommended Products
Grease	JP-40 & JP-402 Pumps PTO Shaft	Daily	Lithium base NGLI - 2	MULTIFAK EP-2 MOBILGREASE 77 LUBRAX GMA-2 BEACON EP-2 AND SIMILAR PRODUCTS
	Boom Joints Hose Reels	100 Hours		

OBSERVATION:

The presentation order of the recommended products does not imply any preference for brand or product.

NOTA:

In areas where temperatures drop to 0° Celsius or less, the water accumulated in the pump can freeze and cause serious damages. To avoid such damages, refer to the figure below and proceed as instructed.

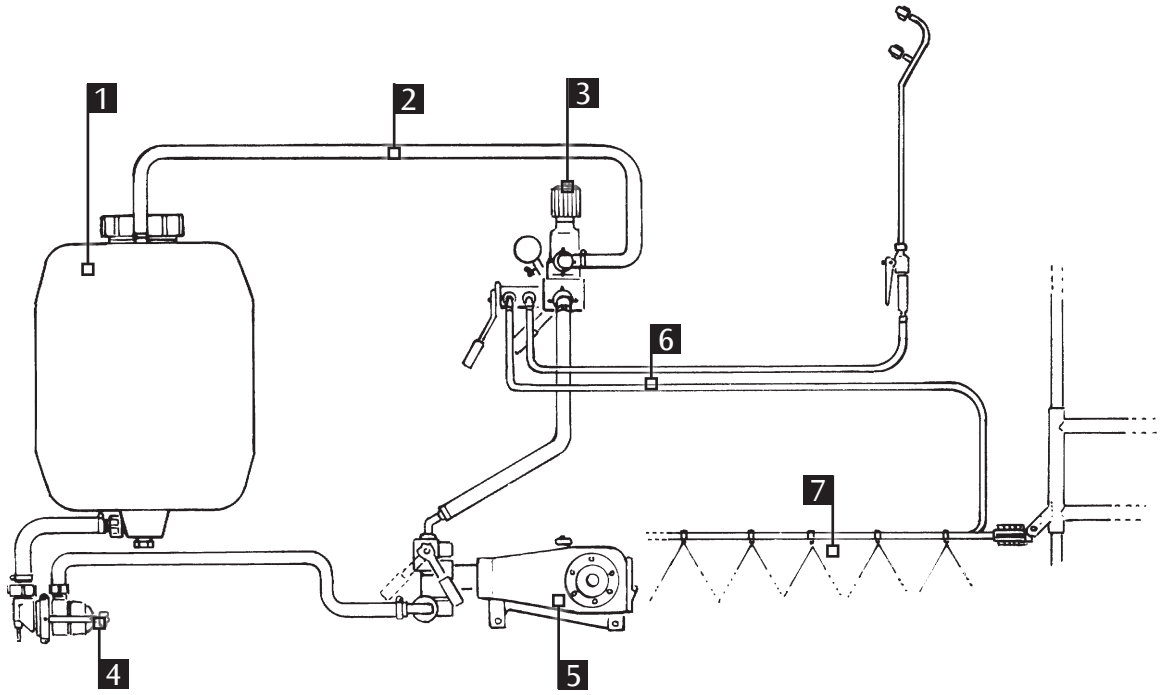


Procedures:

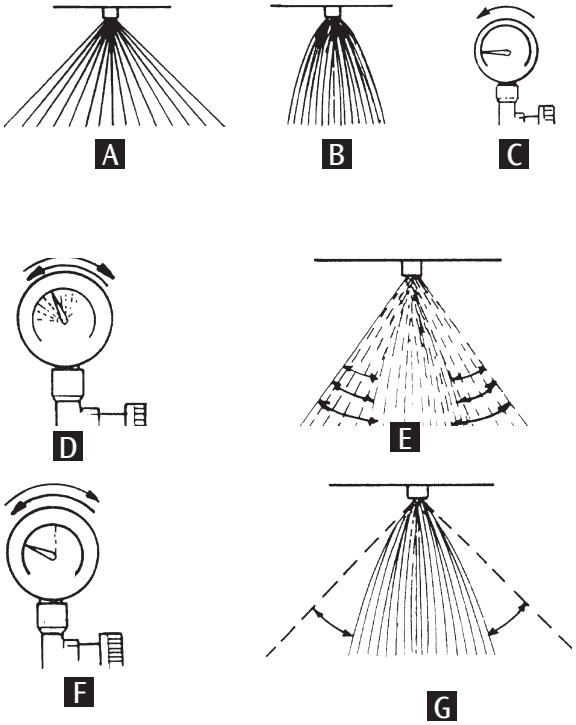
1. Empty the tank (A) completely by removing the lid and opening the filter shut off (C).
2. Disconnect from the pump the hose going from the pump to the compensation chamber.
3. Run the sprayer for about 30 seconds at half speed.
4. Afterward, connect the hose again to the pump.
5. Repeat this operation at the end of each spraying day during winter time to avoid problems in future spray applications.

OBSERVATION:

To avoid damage to the pump, do not run the tractor over the recommended time



1. Tank
2. Return hoses
3. Chemical control
4. Suction filter
5. Chemical pump
6. Pressure hose
7. Booms



Whenever Jacto sprayers equipped with piston pumps present problems, try to classifiy them in one of the following four groups.

a. Lack of suction and pumping capacity
- No liquid flow through the nozzles.
- No return to the tank.
- Pressure gauge does not indicate pressure.

b. Pressure deficiency (partial lack of pressure)
- Desired pressure is not attained (A).
- Specified nozzle spraying angle is not attained (B).
- Pressure gauge shows lower pressure (C).

c. Pressure oscillation
- The pressure gauge needle oscillates (D).
- The nozzle spraying angle oscillates (E).

d. Intermittent pressure
- The pressure gauge needle vibrates with intensity (F).
- The pressure hoses vibrate with intensity.
- The nozzles apraying angle varies (G).

Table 10: lack of suction and pumping capacity

Probable causes	Corrections
1. PTO not turning.	The sprayer should be run with 540 rpm at PTO. Check visually whether the pump is being run.
2. Lack of water in tank.	To run the hydraulic system, it is necessary to contain a minimum quantity of liquid, otherwise there will be no pressure.
3. Filter valve closed (quick shut-off).	When the pump runs, liquid will pass through the valve even in the closed position, however it will be insufficient. Open it.
4. Dirty filter.	Impurities in the filter prevent a free liquid flow. Clean the filter whenever filling the tank, or with more frequency depending on the quality of the water and the type of product applied.
5. Obstruction in the intake hoses.	Check whether the hose connecting the filter to the pump is twisted. Check whether there is any obstruction in the hoses from tank to filter. Fill up the tank with water, open the valve and verify if it flows freely.
6. Air in the system.	Check the filter packing ring. The filter should not leak.
7. Insufficient pump suction.	Remove the cover of the suction valves. Check the condition of the valves and replace them if necessary.

Table 11: pressure deficiency

Probable causes	Corrections
1. Low PTO rpm.	The proper PTO rotation is 540 rpm.
2. Valve closed (quick shut-off).	When the pumps runs, liquid will pass through the valve even in the closed position, however flow will be insufficient.
3. Filter partially obstructed.	The filter should be clean to allow free liquid flow.
4. Intake hose partially obstructed.	A deficient pump will cause depressurization. Check whether the hose connecting the filter to the pump is twisted. Verify whether there is any obstruction in the hoses connecting the tank to the filter. Fill the tank with water, open the valve and observe if it flows freely.
5. Air in the system.	Check the connections and the o'rings of the tank outlet and the pump inlet.
6. Pressure regulator.	Check the valve and valve seat.
7. Worn nozzles.	Check whether the nozzle flow is within the recommended guidelines. Replace the nozzles when the flow rate exceeds 10% of the specified. Use only nozzles recommended by the sprayer manufacturer.
8. Low pumping capacity.	Disconnect the pressure hose from the control valve. Run the sprayer at 540 rpm. Collect water for one minute and measure. The volume collected should approximate this shown below for each pump model: JP - 402 = 38 L/min JP - 75 = 75 L/min JP - 100 = 100 L/min JP - 150 = 150 L/min JP - 300 = 300 L/min

Table 12: pressure oscilation

Probable causes	Solutions
1. Loose belts.	Check belt tension and tighten if necessary.
2. Air in the intake system.	Check for damaged hoses, filter packing rings, etc., and repair if necessary.
3. Pressure regulator.	Check the regulator components and clean or replace if necessary.

Table 13. Intermittent pressure

Probable causes	Solutions
1.Filter shut off valve closed.	PWhen the pumps runs, liquid will pass through the valve even in the closed position, however flow will be insuficient.
2. Pump valve deficiency.	Valve with sealing deficiency or stuck due to impurities.
3. Pump head perforated internally.	Replace it.

Handling sprayers and agrochemicals

We warn the owners and users that the UNREASONABLE USE of this sprayer and chemicals it applies may cause damage to people, properties, animals and environment.

Read carefully and understand thoroughly this manual and the recommendations of the chemicals manufacturers.

Follow strictly the instructions for proper use of this sprayer and chemicals to ensure more safety and efficiency when spraying your crops.

After spraying

- Empty completely the tank and wash thoroughly the sprayer in a proper decontamination place.
- Wash the inside and outside of the sprayer with clean water and detergent.
- Disassemble and clean each nozzle assembly with fine brush, water jet or compressed air.
- Dry, lubricate and store the sprayer in a dry and covered place.
- Repaint the damaged metallic parts to prevent corrosion.
- Spray the mettalic parts with a mixture of lubricating oil to prevent corrosion.
- Take off the individual protective clothing and wash it separately from other clothes.

NOTE!

Avoid leaving chemical mixture residues in the tank. For the last pass, prepare the chemical solution in enough quantity to spray the remaining of the crop.

- Once the work has been completed, pour clean water into the reservoir (50% of its holding capacity) and run the equipment until draining all water out in order to clean the chemical circuit. Clean the suction filter using clear water, neutral detergent and a nylon-bristle brush. These operations shall be performed using the personal protection equipment (PPEs) (gloves, masks, etc.) and at places where no risks of contamination exist to people, animals, water springs, houses, etc.

- Damages to painted parts shall be repaired in order to prevent corrosion.

- Wash the machine on the outside with clean water and perform such cleaning at places where no risk exists of contamination to the environment.

- Keep the machine in a sheltered, dry and ventilated place.

- Do not keep the machine within environments where foodstuff is kept for use by human beings or animals, lest such foodstuff may become contaminated.

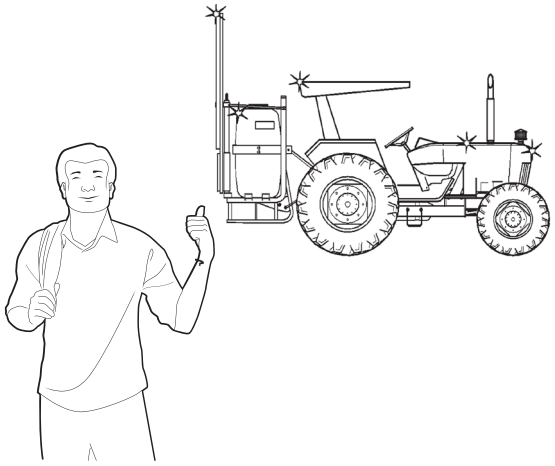
- Do not keep the machine within environments where chemicals and fertilizers are already stored that could cause corrosion on the machine.

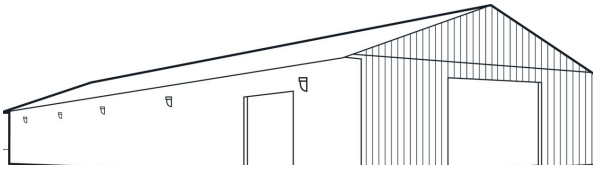
- Do not let children or animals to get close to the equipment.

- Do not apply whatever kind of solution on the plastic or rubber parts such as tires, nozzle holders, etc.

- Do all necessary repairs and maintenance actions to maintain the machine properly prepared and ready for use.

- After cleaning, keep the machine in a sheltered, dry and ventilated place.





Statement of limited warranty 2-87

Product registration card 2-90

Máquinas Agrícolas Jacto S.A. warrants the equipment described herein and agrees to repair or replace parts and components which, under normal operation and wear, following the technical recommendations, show defects in material or workmanship.

Warranty period

One (1) year from the purchase date by the original retail purchaser.

Warranty application

Jacto or its authorized representative shall honor this warranty, if any part or component shows confirmed defect in workmanship.

It shall be understood that the replacement of assemblies such as pumps, control valves, engines, transmissions, hydraulic pistons and similar ones shall only be performed in case that the defect cannot be repaired by replacing parts and/or components, new or reconditioned, according to rules or authorized representative.

This warranty is null and void if

Parts considered as normal maintenance such as: filtering elements, belts, hoses, nozzles, pistons, pressure gauges, as well as usual maintenance, adjustments, retightening, lubrication and painting.

Parts which show wear or tear due to use, UNLESS THEY SHOW DEFECTS IN WORKMANSHIP, ASSEMBLY OR MATERIAL.

Hydraulic, lubricating oils and grease.
Injuries of personal or material nature to the user, owner, or third parties.

Additional charges resulting from paralyzation and repair of the equipment.

Freight charges, pick up and delivery charges.

Damages of any nature resulting from action of gases or liquids used in the equipment.

Warranty exclusions

Parts considered as normal maintenance such as: filtering elements, belts, hoses, nozzles, pistons, pressure gauges, as well as usual maintenance, adjustments, retightening, lubrication and painting.

- Parts which show wear or tear due to use, unless they show defects in workmanship, assembly or material.
- Hydraulic, lubricating oils and grease.
- Injuries of personal or material nature to the user, owner, or third parties.
- Additional charges resulting from paralyzation and repair of the equipment.
- Freight charges, pick up and delivery charges.
- Damages of any nature resulting from action of gases or liquids used in the equipment.

General information

Defective parts replaced under warranty period shall be property of JACTO.

Eventual delays in performing services do not confer to the owner the right to indemnity or to extension of the warranty period.

JACTO reserves the right to change its products or to interrupt manufacturing the equipment.

This limited warranty shall be understood by its expressed terms, and no one in anyway subject to JACTO shall be authorized to modify or amplify the conditions prescribed herein.

In case of need for warranty request, call for the authorized dealer supplying all information required for a prompt compliance. Do not forget the identification of the equipment, total hours of work, and the noticed defect.

For this warranty to become effective the product registration card found in the instruction manual must be filled in and returned to your jacto dealer. This card must be signed by the original retail purchaser, indicating that he has read and understood all safety and operational instructions in the manual. Further the retailing dealer has explained to the original retail purchaser all safety instructions. In no case will warranty be supplied until this card, properly completed and signed, is on file with jacto retailing dealer.

Date	Description	Thechinical/Dealer

PRODUCT REGISTRATION CARD

Invoice number:_____ Date: _____/_____/ _____

Retailing dealer:_____

Phone:_____ City:_____

State:_____

Sprayer:_____ Model:_____

Series:_____ Sprayer No.: _____ Pump No.:_____

Original retail purchaser: _____

Address:_____ Phone:_____

City: _____ State:_____

Purchase date by the original retail purchaser:_____ /_____ /_____

The warranty is in force as of this date: _____ /_____ /_____

Retail purchaser signature: _____

Copy Máquinas Agrícolas Jacto S. A. - Urgent respond with in 30 days first class postage required

PRODUCT REGISTRATION CARD

Invoice number:_____ Date: _____/_____/ _____

Retailing dealer:_____

Phone:_____ City:_____

State:_____

Sprayer:_____ Model:_____

Series:_____ Sprayer No.: _____ Pump No.:_____

Original retail purchaser: _____

Address:_____ Phone:_____

City: _____ State:_____

Purchase date by the original retail purchaser:_____ /_____ /_____

The warranty is in force as of this date: _____ /_____ /_____

Retail purchaser signature: _____

Original retail purchaser's copy

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